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GRANULOMA INGUINALE: ITS OCCURRENCE IN THE UNITED STATES

A REPORT OF FIFTEEN CASES OBSERVED IN NEW YORK *

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Professor of Dermatology and Syphilology, University and Bellevue Hospital Medical College; Visiting Dermatologist, Bellevue Hospital

NEW YORK

Granuloma inguinale is a chronic, infectious, ulcerative process, which usually involves the genitalia or neighboring parts, shows little or no tendency to spontaneous healing, and yields to treatment with antimony and potassium tartrate (tartar emetic).

The disease was probably first recognized in 1882 by MacLeod in India, who called it "serpiginous ulceration of the genitals." Conyers and Daniels,[1] in 1896, reporting cases from British Guiana, were the first accurately to describe the disease as a clinical entity. Galloway,[2] in the following year, reported a case in London and named the condition "ulcerating granuloma of the pudenda"; Grindon [3] reported the first cases in the United States, while to Symmers and Frost [4] belongs the credit of being the first to recognize the Donovan bodies in cases seen in this country.

Granuloma inguinale has been called by various names, which are generally unsatisfactory. The disease is by no means confined to the groin or even to the region of the genitalia. To speak of it as a tropical granuloma is not strictly correct in view of its occurrence in temperate climates. Sclerosing granuloma would appear to be the most suitable name, as it properly describes the pathologic condition.

GEOGRAPHIC DISTRIBUTION

The geographic distribution of the disease is very wide, including India, southern China, Australia, West Africa, the East and West Indies, and parts of Central, North and South America. Manson-Bahr [5] speaks of granuloma inguinale as occurring sporadically in the southern United States. This is hardly accurate at the present time as the disease is endemic in various parts of the North and South, and is much more prevalent than is generally supposed.

Since the publication of Symmers and Frost in 1920, a considerable literature on the subject of granuloma inguinale has appeared in this country. Writing in 1923, Gage [6] stated that a total of fifty-nine cases, including four of his own, had been reported in the United States and its dependencies. From the literature, I have been able to collect data on 150 cases reported in the United States, including fifteen of my own, on which I have made some statistical studies.

The number of reported cases does not give a fair idea of the prevalence of the disease in this country. The geographic distribution is also misleading as more cases have been recorded from northern than from southern states, whereas the disease is unquestionably more prevalent in the South. Johns and Gage,[7] in 1924, stated that "during the past twelve months, ninety-four cases had been admitted to the wards of the Charity Hospital of New Orleans alone, to say nothing of the clinic cases not admitted to the wards." They add that "a rough estimate of the total number of cases under treatment in the various hospitals and clinics in New Orleans would run into the hundreds." In Philadelphia, Small [8] has seen "in the neighborhood of forty cases." Claassen [9] of Cincinnati states that he has observed about thirty cases in his city.

A tabulation by states of the 150 cases collected (table 1) shows that eighty-eight cases were observed in northern or western states, while only sixty-two were reported from the South. The Northern and Western states showed the following figures: New York, 32; Pennsylvania, 31; Ohio, 12; Massachusetts, 3; Connecticut, 2; Illinois, 2; Indiana, 2; Colorado, Minnesota, Nebraska and Washington, 1 each. The figures from the Southern states were as follows: Virginia, 17; South Carolina, 13; Florida, 9; Louisiana, 9; Georgia, 6; Missouri, 5; Kentucky, 2, and Tennessee, 1.

That granuloma inguinale is endemic in certain of the Northern as well as Southern states seems probable. Randall, Small and Belk [10] consider that "there is not the slightest doubt that this supposedly tropical disease has been endemic in the vicinity of Philadelphia for the past fifty years at least." Most of the patients I have seen in New York, however, were living in the South when the disease first appeared. This was true of all except two in my series of cases.

---

* From the Department of Dermatology and Syphilis of the Harlem Hospital.

* Because of lack of space, this article is abbreviated in THE JOURNAL. The complete article appears in the Transactions of the Section and in the author's reprints.

* Read before the Section on Dermatology and Syphilology at the Seventy-Seventh Annual Session of the American Medical Association, Dallas, Texas, April, 1926.

1. Conyers, J. H., and Daniels, C. W.: Lupoid Form of the So-Called Groin Ulceration of This Colony, British Guiana M. Ann. **8**: 13, 1896.
2. Galloway, J.: Ulcerating Granuloma of the Pudenda, Brit. J. Dermat. **9**: 133 (April) 1897.
3. Grindon, Joseph: Granuloma Inguinale Tropicum: Report of Three Cases, Arch. Dermat. & Syph. **31**: 236 (March) 1913.
4. Symmers, Douglas; and Frost, A. D.: Granuloma Inguinale in the United States, J. A. M. A. **74**: 1304 (May 8) 1920.
5. Manson-Bahr: Manson's Tropical Diseases, ed. 8, London, 1925, p. 478.
6. Gage, I. M.: Granuloma Inguinale, Arch. Dermat. & Syph. **7**: 303 (March) 1923.
7. Johns, F. M., and Gage, I. M.: Some Observations on Granuloma Inguinale and Cultural Studies of the Donovan Bodies, Internat. Clin. **4**: 15 (Dec.) 1924.
8. Small, in discussion on Hunter, R. J.: Granuloma Inguinale with Associated Lesions of the Lip, Pharynx and Larynx: Report of a Case, Tr. Coll. Phys., Philadelphia **45**: 455, 1923.
9. Claassen: Personal communication to the author.
10. Randall, A.; Small, J. C., and Belk, W. P.: Granuloma Inguinale, Surg. Gynec. Obst. **34**: 717 (June) 1922; Tropical Inguinal Granuloma in the Eastern United States, J. Urol. **5**: 539 (June) 1921.

TABLE 1.—*Geographic Distribution in the United States*

State	City	Observers	No.	Total
NORTHERN AND WESTERN STATES (88 CASES)				
New York	New York	Symmers, Douglas; and Frost, A. D.: J. A. M. A. 74:1304 (May 8) 1920	2	
		Campbell, M. P.: J. A. M. A. 76:648 (March 5) 1921	3	
		Winfield, J. M., and Hoppe, L. I.: M. Record 101:57 (Jan. 14) 1922	2	
		Parounagian, M. B. and Goodman, Herman: Arch. Dermat. & Syph. 5:507 (May) 1922	1	
		Winfield, J. M.: Arch. Dermat. & Syph. 5:832 (June) 1922	2	
		Parounagian, M. B.: Arch. Dermat. & Syph. 8:293 (July) 1923	2	
		Cannon, A. B.: Arch. Dermat. & Syph. 10:789 (Nov.) 1924	1	
		Thornley: Arch. Dermat. & Syph. 11:695 (May) 1925	1	
		Cornwall, L. H., and Peck, S. M.: Arch. Dermat. & Syph. 12:613 (Nov.) 1925	3	
		Levin, Oscar: Arch Dermat. & Syph. 13:265 (Feb.) 1926	1	
		Fox, Howard: table 2	15	32*
Pennsylvania	Philadelphia	Randall, A.; Small, J. C., and Belk, W. P.: Surg. Gynec. Obst. 34:717 (June) 1922	19	
		Randall, A.: Am. J. M. Sc. 168:723 (Nov.) 1924	8	
		Decker: Arch. Dermat. & Syph. 5:422 (March) 1922; 12:557 (Oct.) 1925	2	
		Hunter, R. J.: Tr. Coll. Phys. Philadelphia 45:455, 1923	1	
	Pittsburgh	Guy and Jacob: Arch. Dermat. & Syph. 13:261 (Feb.) 1926	1	31
Ohio	Cleveland	Driver, J. R.: J. A. M. A. 79:867 (Sept. 9) 1922	6	
	Cincinnati	Claussen, H. L.: Ohio State M. J. 18:685 (Oct.) 1922	4	12
Massachusetts	Boston	Shattuck, G. C.: Boston M. & S. J. 188:530 (April 12) 1923	1	
		Boardman, W. P.: Arch. Dermat. & Syph. 12:125 (July) 1925; 13:420 (March) 1926	2	3
Connecticut	Meriden	Murdock, T. P.: Boston M. & S. J. 191:530 (Sept. 18) 1924	1	
	New Haven	Lane	1	2
Illinois	Chicago	Stillians, A. W.: Arch. Dermat. & Syph. 1:471 (April) 1920	1	
		Schochet, S. S.: Surg. Gynec. Obst. 38:750 (June) 1924	1	2
Indiana	Indianapolis	Carter, F. R.: Urol. & Cutan. Rev. 27:529 (Sept.) 1923	1	
	Evansville	Ehrich, W. S.: Surg. Gynec. Obst. 40:107 (Jan.) 1925	1	2
Minnesota	Rochester	Stokes, J. H.; O'Leary, P. A., and Goeckerman, W. H.: Arch. Dermat. & Syph. 4:847 (Dec.) 1921	1	1
Colorado	Denver	Frank, R. T.: Southwest. M. J. 7:401 (Nov.) 1923	1	1
Nebraska	Omaha	Best, R. R.: Ann. Surg. 82:273 (Aug.) 1925	1	1
Washington	Yakima	Scott, J. F.: Northwest. Med. 25:30 (Jan.) 1926	1	1
SOUTHERN STATES (62 CASES)				
Virginia	Richmond	Ross, C. F.: Virginia M. Monthly 49:401 (Sept.) 1923 †	17	17
South Carolina	Charleston	Lynch, K. M.: South. M. J. 15:688 (Sept.) 1922	9	
	Sumter	Weinberg, M. J.: Urol. 9:505 (June) 1923	3	
	Charleston	Thompson, G. E.: J. South Carolina M. A. 20:33 (Feb.) 1924	1	13
Louisiana	New Orleans	Reed, W. A., and Wolfe, M.: New Orleans M. & S. J. 74:25 (July) 1921	5	
		Gage, I. M.: Arch. Dermat. & Syph. 7:303 (March) 1923	4	9
Florida	Jacksonville	Oetgen, G. J.: J. Florida M. A. 9:84 (Nov.) 1922	9	9
Georgia	Columbus	Gruhzit, O. M.: Am. J. Trop. Med. 3:289 (July) 1923	2	
	Atlanta	Smith, W. B., quoted by Schochet	3	
		McRae, J. C.: J. A. M. A. 84:512 (Feb. 14) 1925	1	6
Missouri	St. Louis	Grindon, Joseph: Arch. Dermat. & Syph. 31:226 (March) 1913	3	
		Taussig, F. J.: Am. J. Obst. & Gynec. 6:411 (Oct.) 1923	2	5
Kentucky	Louisville	Horwitz, H. L.: M. J. & Record 119:199 (Feb. 29) 1924	1	
		Young, W. J.: Kentucky M. J. 22:584 (Dec.) 1924	1	2
Tennessee		Morrisey, P. G.: J. Tennessee M. J. 15:105 (June) 1922	1	1

* One case appears in two case reports.
† Additional information through personal communication.

SYMPTOMS

Granuloma inguinale generally begins as a papule which soon enlarges and undergoes superficial ulceration. Later it appears, according to Manson's description, as a mass of granulation tissue "surrounded by a serpiginous irregular border of nodular, somewhat raised, red, glazed, delicately skinned or pinkish ulceration or cracked new growth." The clinical appearance of the disease varies greatly in different cases. It usually affects the groins or genitalia or neighboring parts, and invades both the skin and the mucous membranes. One of the striking features of the disease is the absence of enlargement of the neighboring lymphatic glands. Another feature is the general absence of constitutional symptoms, many patients with more or less extensive lesions appearing to be in good general health. The disease may follow traumatism, and is doubtless often contracted through sexual intercourse. Its course is very chronic and there is little or no tendency to spontaneous healing. Even after apparent cure by antimony and potassium tartrate, relapses are frequent.

In the differential diagnosis, syphilis, tuberculosis, chancroid and cancer must be considered, and also yaws in regions where this disease is endemic. The necessity of differentiating cancer is greatly lessened by the fact that the large majority of the patients are negroes. While it is true that cancer may attack the negro skin, such a condition is extremely rare. In an experience of fourteen years with large numbers of negroes at the Harlem Hospital, I cannot recall having seen a single case of epithelioma of the skin in a full blooded negro. This racial immunity has been observed by Hazen and others who have studied the subject. In this connection it is interesting to note that in one of Lynch's [11] patients the process seemed to have started as a granuloma "which developed into epithelioma in the course of tartar emetic administration, covering twenty-three days." Sections in this case showed, according to Lynch, a "well marked squamous cell epithelioma."

ANALYSIS OF CASES RECORDED IN THE UNITED STATES

An analysis of 150 cases recorded in the United States, including fifteen of my own, showed that there were ninety males and sixty females. This is not in accord with the statement of Galloway that the disease is more common in the female sex. Manson-Bahr also says that it is seen "more often in women, especially where polyandry is practiced."

The average age of 131 patients (whose age was mentioned) was 30 years. The youngest patient was 15 and the oldest 60 years.

The prevalence of the disease in the negro race was shown by the fact that there were 135 negroes as opposed to fifteen whites, a ratio of 9 to 1.

The duration (mentioned in 127 cases) varied from ten days to twenty-six years. The average was three and one-fourth years.

The location of the eruption in every case was in the neghborhood of the genitalia, and in all except nine cases confined to this region. The favorite site was the groin, which was involved in seventy cases. The frequency with which other localities were affected was as follows: penis, 53; vulva, 44; perineum, 28; pubes, 22; scrotum, 21; anal region, 13; buttocks, 12; thighs, 10; scrotal-thigh fold, 5, and sacrum, 3 cases, respec-

11. Lynch, K. M.: Granuloma Inguinale, J. A. M. A. 77:925 (Sept. 17) 1921.

tively. In many of the patients, several of these regions were simultaneously affected. In twelve cases there was an extension of the process into the vagina.

Of the nine cases in which there were lesions in regions other than the neighborhood of the genitalia, the diagnosis was microscopically confirmed in only two. The parts affected included the cheek (Lynch) side of the neck (Ross [12]), nose, throat and mouth (Ross), upper lip and side of neck (Parounagian and Goodman [13]), lip, pharynx and larynx (Hunter), back of the hand (Claassen [14]), side of neck (Winfield [15]), thigh, at the site of a skin graft (Gage), and lower lip (Taussig [16]). In Hunter's case, the Donovan bodies were found in the lesion on the lip. No examination could be made of the throat, as the patient could not open his mouth. As all the lesions, including those about the genitalia, healed under treatment with antimony and potassium tartrate, it seemed fair to assume that the disease of the pharynx and larynx was also granuloma inguinale. Casual mention was made by Johns and Gage of one of their cases in which the chest, cheek, lip, gums and palate were involved, and of another case with a lesion on the sole, "from which the Donovan bodies were recovered." Lanford, in discussing Lynch's [17] paper, said, "We have had several cases in New Orleans in which the neck, mouth, gums and tongue were involved and in which the organism has been found in all lesions."

It is now generally agreed that syphilis plays no part in the causation of granuloma inguinale. Many of the patients, however, with undoubted granuloma show evidence of a coexisting syphilitic infection. This is especially true of negroes, in whom the incidence of syphilis is greater than in whites. As the clinical differentiation is often difficult, it is always advisable to exclude the presence of syphilis by both Wassermann and therapeutic tests.

In the series of 150 cases, the Wassermann test was performed in 102 cases, of which thirty-five were positive and sixty-seven negative. In thirty-four cases, no mention was made of any attempt to determine the presence of syphilis by serologic or therapeutic means. Of the remaining 116 cases, syphilis was apparently excluded in 102 by the Wassermann test or antisyphilitic treatment or both.

Elephantiasic enlargement of the genitalia, due to lymphatic obstruction and independent of filariasis, was observed in fourteen cases, equally divided between the sexes. The vulva was involved in seven cases, the scrotum in five, and the penis in two cases. This condition was observed by Campbell,[18] Randall, Small and Belk, Oetgen,[19] Gruhzit,[20] Weinberg,[21] Gage, Murdock,[22] and myself (fig. 1). In the case recorded by Campbell the scrotum measured 8 inches (20 cm.) in its longest dimension. An illustration of a similar case accompanies the report of Gage.

12. Ross, C. F.: Granuloma Inguinale, Virginia M. Monthly, **1**: 401 (Sept.) 1923.
13. Parounagian, M. B., and Goodman, Herman: Ulcerating Granuloma (Granuloma Inguinale): A Report of a Rare Example of This Disease in a Syphilitic Patient, Arch. Dermat. & Syph. **5**: 597 (May) 1922.
14. Claassen, H. L.: Granuloma Inguinale, Ohio State M. J. **18**: 685 (Oct.) 1922.
15. Winfield, J. M.: Granuloma Inguinale: Two Cases, Arch. Dermat. & Syph. **5**: 832 (June) 1922.
16. Taussig, F. J.: Am. J. Obst. & Gynec. **6**: 411 (Oct.) 1923.
17. Lynch, K. M.: Tartar Emetic in the Treatment of Granuloma Inguinale and Other Granulomata and Granulating Ulcers, South. M. J. **15**: 688 (Sept.) 1922.
18. Campbell, M. F.: Granuloma Inguinale, J. A. M. A. **76**: 648 (March 5) 1921.
19. Oetgen, G. J.: Granuloma Inguinale, J. Florida M. A. **9**: 84 (Nov.) 1922.
20. Gruhzit, O. M.: Granuloma Inguinale, Am. J. Trop. Med. **3**: 289 (July) 1923.
21. Weinberg, M.: J. Urol. **9**: 505 (June) 1923.
22. Murdock, T. P.: Boston M. & S. J. **191**: 539 (Sept. 18) 1924.

ETIOLOGY

There has been a good deal of discussion regarding the etiology of granuloma inguinale, and the question at present is by no means definitely settled. Conyers and Daniels, who first described the disease, considered it to be tuberculous in origin, speaking of it as the "lupoid form of groin ulceration." Various spirochetes were later found by different observers, some of whom regarded the disease as a manifestation of syphilis.

Donovan,[23] in 1905, described certain inclusion bodies which have since been found with great frequency in cases of granuloma inguinale and are now generally considered to be the cause of the disease. Donovan regarded them as protozoa. He described these bodies, which he obtained in scrapings from the deeper parts, as "small oval forms about one and a half to two microns in length, found in the epithelial cells of the stratum Malpighii or in macrophages, usually in large numbers, either scattered or in small round compact groups." By Romanowsky stain these bodies showed a well defined contour with deep pinkish protoplasm and a flatly oval very deep pink nucleus.

Cultures were later obtained by various investigators of organisms, morphologically resembling the Donovan bodies, which were considered to be capsulated diplococci or bacilli. Aragão and Vianna [24] regarded the organism as one of the schizomycetes, but classed it as belonging to a new genus which they named *Calymatobacterium*. Walker [25] obtained cultures which he thought belonged to the class of encapsulated bacilli, of which Friedlander's *Bacillus mucosus-capsulatus* is the type. Recently Cornwall and Peck [26] have cultivated an organism, morphologically resembling Donovan bodies, which they inoculated in rabbits. From these animals they recovered a pure culture of an organism which was thought to be identical with the one obtained from the patients suffering from granuloma inguinale.

While Randall, Small and Belk isolated an encapsulated bacillus resembling Donovan bodies, they conclude that "the question remains as to whether the organism seen in smears and that obtained in cultures, which appear so similar, are identical." Johns and Gage consider that the Donovan bodies are protozoa and not simple encapsulated bacilli. They also state that they cannot substantiate any claims that the Donovan bodies have thus far been cultivated. They add that "if granuloma is a bacterial disease then we would possess the first synthetic specific drug [antimony and potassium tartrate] against the vegetable parasites in the history of medicine."

MICROSCOPIC EXAMINATIONS

Material for histologic examination was obtained from seven patients and submitted to Dr. Alexander Fraser, professor of pathology at the University and Bellevue Hospital Medical College. He has kindly given the following report:

The histologic features of the lesions in all these cases are essentially the same, and one description can be made to apply to all.

The general outstanding feature of the lesion is its markedly destructive character, the normal architecture of the skin and subcutis being extensively destroyed and replaced by new elements. In places the epiderm is absent and replaced by

23. Donovan: Indian M. Gaz. **40**: 414, 1905.
24. Aragão and Vianna: Mem. do Inst. Oswaldo Cruz, **5**: 211, 1913.
25. Walker, E. L.: The Etiology of Granuloma Inguinale, J. M. Research **37**: 427 (Jan.) 1918.
26. Cornwall, L. H., and Peck, S. M.: Etiology of Granuloma Inguinale, Arch. Dermat. & Syph. **12**: 613 (Nov.) 1925.

serum, fibrin and polymorphonuclear leukocytes with a variable number of lymphocytes, plasma cells and large mononuclears. This exudate extends for variable depths, sometimes for the whole depth, of the corium. In these ulcerative areas the tissue is edematous, the thin walled blood and lymph vessels are distended, and frequently ruptured, thus giving rise to irregularly shaped pools of blood and lymph. The preserved epiderm adjoining the ulcerated areas shows very marked regenerative hyperplasia, expressing itself in long downgrowths of the epithelial pegs. The immediately adjoining corium or subcutis shows a rather characteristic dense plasma cell infiltration, running through which can be seen a network of capillaries with very marked hyperplasia of the endothelium presenting the appearance of solid cords of large pale staining "epithelioid" cells. Extending from this zone, the proliferation of fibroblasts and the production of collagen dominate the picture, the collagen appearing frequently in large patches

Table 2.—*Fifteen Cases of Granuloma Inguinale Observed in New York City*

Number, Name and Sex*	Race	Age	Nativity	Duration	Location	Wassermann Test	Antisyphilitic Treatment	Donovan Bodies	Antimony and Potassium Tartrate	Comment
1. R. G. ♂	Negro	21	South Carolina	11 months	Penis (glans)	Negative	9 neo-arsphenamine injections; no effect	Present	One injection	Left clinic
2. G. H. ♀	Negro	18	South Carolina	4 years	Vulva (right labium majus and minus)	Negative	7 neo-arsphenamine injections; no effect	Present	19 injections, Dec. 15, 1925, to Feb. 4, 1926	Practically healed
3. A. S. ♀	Negro	22	New Jersey; in New York past 10 years	3 years	Extensive eruption of vulva, perineum and anus	Negative	8 arsphenamine and 8 mercury injections; no effect	Present	41 injections, May 17, 1924, to July 28, 1925	Improved
4. R. M. ♂	Negro	27	United States	6 months	Penis (sulcus)	Weakly positive +	None	Present	None	Left clinic
5. D. W. ♀	Negro	20	Georgia	19 months	Vulva (left labium majus and minus)	Negative	3 injections in arms, 2 in buttocks; no effect	Present	29 injections, Nov. 6, 1924, to Aug. 21, 1925	Marked improvement
6. S. W. ♂	Negro	22	Georgia	1 year	Penis (glans) and right groin	Positive +++	8 arsphenamine injections; no effect	Present	4 injections	Improved
7. S. J. ♂	Negro	22	South Carolina	3 months (previous attack 4 years ago; surgically treated)	Penis, scrotum and perineum	Positive	24 arsphenamine injections given in past year	Present	26 injections, Feb. 20, 1925, to Feb. 8, 1926	Marked improvement
8. G. B. ♂	Negro	28	United States (sailor visiting tropical countries)	6 years	Penis (glans)	Negative	None	Present	2 injections	Died of pulmonary tuberculosis ten days later
9. S. A. ♀	Negro	26	South Carolina; in Florida when disease appeared	3 years	Vulva (right labium majus and minus)	Negative	None	Present	8 injections; relapse, then 2 injections	Healed
10. C. J. ♀	Negro	37	North Carolina	10 months	Vulva, perineum, anus and buttocks	Negative	8 silver arsphenamine injections; no effect	Not found	None	Treated solely by roentgen ray; practically healed
11. C. H. ♂	Negro	22	United States	4 months	Penis (glans and shaft)	Negative	3 neo-arsphenamine injections; no effect	Not found	32 injections, Dec. 4, 1924, to Dec. 8, 1925	Practically healed
12. L. B. ♂	Negro	27	South Carolina; in New York when disease appeared	8 weeks	Penis (shaft and prepuce)	Positive ++++	5 neo-arsphenamine injections; no effect	Not found	None	Left clinic
13. J. R. ♂	Negro	20	Florida	3 years with several remissions	Penis (sulcus and right groin)	.....	7 neo-arsphenamine injections; no effect	Not found	None	Left clinic
14. L. B. ♀	Negro	21	Florida	2 years	Extensive eruption of vulva, buttocks and pubes	Negative	Said to have had 3 arsphenamine injections; no effect	Present	5 injections given at City Hospital	Improved
15. N. J. D. ♂	White	29	New York; in Florida when disease appeared	6 weeks	Penis (sulcus)	Negative	None	Present	Awaiting treatment	

* In this column, ♂ indicates male; ♀, female.

or strands, and extensively hyalinized. In the peripheral zone, too, the arteries and arterioles show marked thickening and rather peculiar changes. Many of them show moderate lymphocytic infiltration of the whole wall together with proliferation and adhesion of the endothelial cells frequently to the extent of obliteration. The musculature in many cases is replaced by dense hyalinized fibrous tissue.

These changes vary in position and extent in different sections and in different cases but are present in essentially the same manner in all. The picture corresponds to that seen in granuloma inguinale, though it is not specific.

TREATMENT

The earlier methods of treatment by surgery, cauterization, the roentgen ray and other methods did not prove satisfactory. Thorough surgical removal of the affected areas was frequently followed by relapse. While the roentgen ray has been successful in a few cases, it has been of little or no value in others. It was used in one of my cases as the sole method of treatment, with almost complete disappearance of the eruption. The patient did not remain under observation, and the result was doubtless only a temporary one.

Antimony and potassium tartrate was first used for the treatment of granuloma inguinale by Aragão and Vianna of Brazil and is now properly considered to be a specific for this diseases. In the majority of cases, it causes a progressive involution of the lesions with disappearance of the Donovan bodies. It is generally administered intravenously in doses of from 5 to 12 cc. of a 1 per cent solution, at intervals of two or three days. It can be obtained commercially in sealed ampules containing 5 cc. of the solution. General reactions are absent or insignificant as a rule except in the higher dosage, when headache, dizziness, nausea and vomiting may result. Care must be used in giving intravenous injections to avoid infiltration of the tissues, as sloughing may result. With proper technic the larger veins are not injured though the smaller ones are frequently obliterated. To avoid relapses, Gage suggests that after entire healing, the patient should receive weekly injections for two or three months, followed by two injections monthly for four months.

In the series of 150 American cases in which results of treatment by antimony and potassium tartrate were mentioned, complete or almost complete healing took place in seventy-eight, and various degrees of improvement in thirty-one cases.

Fatalities are recorded by Symmers and Frost, Campbell, Lynch and Taussig, death being due to other causes than the administration of the drug. One of my

patients died of pulmonary tuberculosis after two injections of 5 cc. had been given. A fatal termination occurred in two cases reported by Johns and Gage which seemed in their opinion to be directly due to the use of antimony and potassium tartrate. They stated that these patients "presented all of the indications given in the textbooks for tartar emetic poisoning; viz., multiple punctate hemorrhages, no postmortem clotting of the blood, and acute yellow atrophy of the liver." Both of these cases they added "resulted from doses of 18 cc. and 20 cc., respectively, of a 1 per cent solution that had been stepped up from 4 cc. by an increase of 2 cc. per injection." In view of the possible cumulative effect and probable injury to the liver by long continued dosage of antimony and potassium tartrate, they suggest that "interrupted courses of treatment be given instead of the usual almost continuous plan."

Antimony in the form of antimony and potassium tartrate has an undoubted specific action in granuloma inguinale. It is possible, however, in view of the report of Randall,[27] that better results can be obtained by the use of the newer synthetic compounds of antimony. The preparations in question are antimony sodium thioglycollate and antimony thioglycollamide. Randall writes that "clinically they have evidenced no toxicity in the dosage advised, while five patients intolerant to tartar emetic have taken these drugs without restrictions." He reports prompt and complete healing in nine cases treated by these new remedies. Both of them have been given intramuscularly with success.

PERSONAL CASES OBSERVED IN NEW YORK

Of the fifteen cases of my own included in this report (table 2), there were nine males and six females. The age varied from 18 to 37 years, the average being 26.5. One patient was a white man, and fourteen were negroes, all of the latter with one exception being full blooded.

All of the fifteen patients were natives of the United States. The majority were living in the South when the disease was first noticed, including four in Florida, three in South Carolina, two in Georgia and one in North Carolina. Two were living in New York at the time of onset.

The duration of the disease varied from six weeks to six years, the average being a little over twenty-one months. In all of the males, the lesions involved some portion of the penis and, in addition, the groin in two cases, and the scrotum and perineum in one case. In all of the females, the vulva was affected and in addition, in three cases, the disease had invaded the perineum or buttocks.

An attempt was made in most of the cases to eliminate syphilis as a causative factor, even in those in which the Donovan bodies were present. In three cases in which the Wassermann reaction was strongly positive, there was no effect from antisyphilitic treatment. In ten cases the Wassermann reaction was negative, and in addition seven of these failed to respond to the therapeutic test.

The diagnosis was confirmed in eleven cases by the presence of the Donovan bodies in smears. The latter were generally obtained from the deeper parts of tissue removed for histologic examination. The organisms, which were stained by Wright's method, varied greatly in abundance, lying singly and in groups both within and outside the large mononuclear cells (fig. 5). The diagnosis in the remaining four cases was made from the clinical appearance, histologic examination, and the action of antimony and potassium tartrate.

The therapeutic results in my cases were rather disappointing, partly because of the irregularity of attendance of the patients, all of whom (with one exception) were treated in the outpatient department of the hospital. There were only six patients who remained long enough or whose attendance was sufficiently regular to obtain results. In three cases, the lesions were completely or almost completely healed, and in three others improved after a number of injections varying from ten to forty-one. The dosage in the majority of the cases was 5 cc. of a 1 per cent solution. No general reactions were observed from this dosage, most of the patients merely complaining of a metallic taste in the mouth. In a few cases, in which 10 cc. of the drug was given, nausea and vomiting were occasionally noted.

In one case (fig. 4) the disease disappeared almost completely under roentgen-ray treatment alone, six exposures of unfiltered irradiation being given (a total of four and one-fourth skin units).

SUMMARY

A study of granuloma inguinale in the United States shows it to be endemic in the South and in certain parts of the North. In the Southern States, it is more prevalent than the number of reported cases would indicate.

An analysis of 150 cases, recorded in the United States, including fifteen personal cases, showed the following: There were ninety males and sixty females, the average age being 30 years. The duration of the disease varied from ten days to twenty-six years, the average being three and one-fourth years. There were 135 negroes and fifteen whites, a ratio of 9 to 1. In every case the disease was situated in the neighborhood of the genitalia, and in nine cases, in addition, lesions were present on other parts of the body. Syphilis was found to coexist in thirty-five of the patients. In fourteen cases a varying degree of elephantiasic enlargement of the genitalia was recorded.

The accompanying report of fifteen personal cases observed in New York showed a proportion of three males to two females and the average age was 26½ years. All except one were negroes, and all except two were living in the South when the disease first appeared. The average duration was about twenty-one months. The Donovan bodies were found in eleven cases. In one case the roentgen ray was used with at least temporary success. Others were treated by antimony and potassium tartrate.

114 East Fifty-Fourth Street.

ABSTRACT OF DISCUSSION

DR. E. D. CRUTCHFIELD, Galveston, Texas: Many more cases of this disease are being cited since attention was called to it. At the hospital in Galveston we could show a few cases all the time. The disease has an etiology that is somewhat obscure. However, I have felt that it belongs in the *B. mucosus-capsulatis* group. In the diagnosis of the disease, some things are of great importance. One or two scrapings may not reveal the Donovan bodies in the disease we formerly called chronic chancroidal infection, but if one makes several attempts one frequently is able to find such specimens as Dr. Fox presented. In the forty years or so that the disease has been known, it has been recognized along the Gulf Coast only in the last ten years. I should like to ask Dr. Fox whether he has found that these diseases are more or less venereal, whether the patients have a phagedenic lesion that gradually becomes

27. Randall, A.: Two New Antimony Compounds for Intravenous Use: A Study of Their Therapeutic Value in Cases of Granuloma Inguinale, Am. J. M. Sci. **168**:728 (Nov.) 1924.

chronic and is many times complicated by chancroidal lesions, and whether, when the chancroid has healed, there is left behind the sclerosing granuloma that is so typical. I have seen another type that presents the sclerosing granuloma, but between the folds will be found a vegetating dermatitis, giving the appearance of a dermatitis vegetans. This may be just another form of the disease, but I have felt that it might be a complication. We speak of antimony and potassium tartrate as a specific, and perhaps it is; but in a certain number of cases improvement occurs for a time, and then a point is reached at which improvement no longer obtains.

Dr. Samuel M. Peck, New York: There is a great deal of confusion about inguinal granuloma, which I think is due to loose diagnoses and terminology. Dermatologists around New York and in the textbooks still speak of leishmaniosis in connection with inguinal granuloma, which we know has nothing to do with this disease. Dr. Cornwall and I isolated the same organism from three cases. We employed complement fixation, aliergic reaction and vaccine treatment. We sent our cultures to several persons, who criticized them because they obtained abscesses when injecting animals. This will occur if large amounts are used, but a very typical picture may be produced if small amounts are injected intracutaneously.

Dr. Jeffrey C. Michael, Houston, Texas: In my experience, response to treatment has not been as satisfactory as one is led to believe. Fraser, in South Africa, did not get entirely satisfactory results from the use of antimony and potassium tartrate. Lynch made the point that if the disease is associated with syphilis the response to treatment is less prompt, and ofttimes not satisfactory. I should like to know whether Dr. Fox in his broader experience has found this to be true.

Dr. I. L. McGlasson, San Antonio, Texas: Although Dr. Fox has never seen a basal cell epithelioma on the skin of a full blooded negro, I saw one in a colored patient who was sent to me from the base hospital at Fort Sam Houston. It was a typical basal cell epithelioma.

Dr. Aldo Castellani, New Orleans: I have had experience with granuloma inguinale in Ceylon, India, and in this country. It is quite common in New Orleans. I firmly believe that the Donovan bodies are the causative agents of the disorder, but I am not quite convinced that these bodies have been actually cultivated. As to the diagnosis, two diseases must be kept in mind, syphilis and epithelioma. In true granuloma inguinale, potassium iodide, mercury and arsphenamine have no action. Epithelioma is rare in colored races, though I have seen a few cases. Its histologic features are quite different from granuloma, and, of course, no Donovan bodies are present.

Dr. Howard Fox, New York: In regard to the relationship of granuloma inguinale and various chancroidal or phagedenic ulcers, I feel that some of these cases in which the latter diagnoses have been made were in reality examples of granuloma inguinale. Some observers have felt that the organism of granuloma inguinale is a secondary invader. In Lynch's experience, many of the cases were preceded by syphilitic or other infections. I did not intend to give the impression that the cure of granuloma inguinale by antimony and potassium tartrate was an easy matter. It was especially difficult with the type of patients treated in my clinic, where the attendance was very irregular. I am glad that Dr. Castellani agrees with my statement that carcinoma of the skin of a full blooded negro is rare. It is interesting to note that this condition was present in one of the cases reported by Lynch, the microscopic report showing the lesion to be a squamous cell epithelioma.

The Art of Swimming.—Parents are becoming convinced that their children should be taught to swim. The old dictum forbidding approach to the water is entirely out of date and every child should be encouraged to learn this useful function. There is abundant opportunity for all to learn this simple art since public baths, swimming pools in school buildings, and the pools maintained by many social and religious organizations, are becoming more numerous each year.—*J. M. Soc. New Jersey* **23**:570 (Nov.) 1926.

STRICTURE OF THE FEMALE URETHRA *

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A number of years ago, while acting temporarily in the capacity of cystoscopist to a large gynecologic clinic, I was impressed by the number of women who reported great relief of their urinary symptoms, following a simple cystoscopy. The group of symptoms in these cases was by no means limited to the lower urinary tract, but included those referable to the renal area as well. In other words, the category extended from urethral irritability to signs and symptoms suggesting pronounced renal lesions. This undoubtedly has also been the experience of many urologists, as I have learned from my consultations and correspondence. During the last few years, I have had an abundant opportunity to ascertain the reasons for the temporary relief given this group of patients. It is my belief that the answer has been found in the presence of urethral stricture as a definite pathologic entity.

The archives of medicine hold scant but rather interesting comments on stricture of the female urethra. I am informed by von Frisch [1] that it had been mentioned at least as a possibility by Fabricius in the early days of the old anatomic school of Padua. The first real description, however, is certainly that of Lisfranc [2] in the year 1824. Following this, a description next appears in the literature in the works of Civiale [3] in 1850. This is the author whose name is also closely associated with the study of urethral obstruction in the male. To Civiale belongs the credit of having established the response of the sympathetic nervous system to urethral lesions. This is a factor of considerable importance. Twenty-five years later, Newman,[4] in 1875, recognized the importance of stricture of the female urethra, and advocated its treatment by electrolysis. Fissaux,[5] in his reports in 1879, reviews the subject and emphasizes its importance.

Van de Warker in his papers of 1887 [6] and 1890 [7] strongly brings this subject to the attention of urologists. He states that all the great writers on urinary and gynecologic conditions seem to treat with silence a matter of great import; namely, that of stricture of the female urethra. His articles are of striking interest. It was Skene [8] who, in 1887, called attention to the fact that, while urethral stenosis in the female was not an everyday occurrence, it was seen often enough to require serious consideration. On the basis of Skene's statement, this matter was taken up by the London Obstetrical Society in the same year.[9] Many interesting comments were made at that time.

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* From the Urological Department (James Buchanan Brady Foundation) of the New York Hospital.

* Read before the Section on Urology at the Seventy-Seventh Annual Session of the American Medical Association, Dallas, Texas, April, 1926.

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3. Civiale, M.: Traité pratique des maladies génito-urinaire, Paris, 1850.
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6. Van de Warker, E.: Stricture of the Urethra in Women, M. News **51**: 59, 1887.
7. Van de Warker, Ely: Stricture of the Female Urethra, J. A. M. A. **15**: 490 (Oct. 4) 1890.
8. Skene, A.: Diseases of the Bladder and Urethra in Women, New York, William Wood & Co., 1887, p. 331.
9. Stricture of the Urethra, Tr. London Obst. Soc. **29**: 27-51, 1887.

Otis,[10] in 1892, started a systematic study of obstructive lesions of the female urethra, but for some reason they were never carried to a successful completion. The following conclusions from some of this writer's works are most striking and convincing. He states that "strictures of the female urethra occur in a sufficient extent to induce reflex conditions as varied and severe as those of the male." Otis also believed that when lesions of the female urinary apparatus did not respond well to treatment, the urethra should be explored with the bulbous sound and the urethrometer. Urology owes a great debt to Otis for his introduction of the bulbous sound, for without it the excellent work of others would not have been possible. It is said that he also advocated the use of the wax tip, later amplified by Kelly[11] and Burton Harris,[12] for use in vesical and ureteral lesions. In the textbooks on urology and gynecology, there is comparatively little space allotted to the subject of urethral stricture in women. The possibilities of urethral infections aside from definite stricture are so well known as to require little comment. It, however, remained for Stevens[13] of San Francisco, in 1920 and 1922, to make the first real scientific investigations of this disease.

INCIDENCE OF FEMALE STRICTURE

It is apparently taught as a routine and generally accepted that stricture of the female urethra is rather a rare entity. Of this I have never been convinced. An examination of the literature is not of great assistance, as it is scanty, to say the least. When I first began my original studies, I examined more than 3,000 gynecologic and urologic records[14] in this country and abroad. I found only four cases definitely diagnosed as urethral stricture of the female. These were all cases that were readily diagnosed: one, a carcinoma; one, an obstetric tear into the urethra, and three, cases of marked gonorrheal infiltrations. Since the foregoing investigation, I have made other extensive reviews, with practically no further results.

Hunner[15] speaks of narrowing of the urethra associated with ureteral lesions. In some of his case records, there is evidence of marked urethral infiltrations. He is quoted by Stevens[16] as finding 60 per cent of those suffering from ureteral lesions to have a urethral narrowing as well. Bugbee[17] states that he is surprised to find the extent to which stricture of the urethra exists in women.

Osgood[18] tells us that the urethra of the female is analogous to the membranous urethra in the male. Stricture of this portion of the urethra in the male (because of the squamous epithelium, which offers resistance to infection, and its absence of glandular strictures in a continuation of the mucosa) is rare. This author says this condition exists in the female urethra as well. Reasoning in this manner would seem sound, both from an anatomic as well as a theoretical standpoint.

Stevens[19] believes that stricture of the female urethra is usually missed by both the urologist and the gynecologist. Of this there can be little doubt. This careful student found ninety cases of stricture of the female urethra in 169 urologic cases. We would do well to take these statements seriously. Certainly, they emphasize the importance of the disease.

Wynne[20] quotes Winckel as having noted three cases in 3,000 records. Winckel, in his early essays and in his latest textbook, also states that female stricture is a rare lesion.

Meisel[21] of Budapest found 378 strictures in the male to one in the female.

Pasteau[22] collected reports of twelve cases from the literature.

Fischer[23] records four cases in 4,000 records.

Herman,[24] in England, noted sixty-nine cases.

The similarity in the percentage reports in the larger series of cases is rather striking. In a previous report, I stated that I had found urethral stricture in thirty-five out of 180 women examined; that is, presenting themselves for urologic examination. Since the foregoing notes were made, I find that my record is now eighty-six cases found in 460 examinations. While this is by no means a large number, I cannot help but feel that this incidence appeals to us as fairly frequent. Most writers stress the point that stricture of the female urethra is rare, and with this dictum in mind, few of us look for it. In fact, Stevens is quite correct when he states that most of us are too ready to accept the statement as final.

ETIOLOGY

In discussing the cause of this condition, many medical writers seem to have ventured quite far afield, while the real factor was among the best known offenders. Winckel,[25] undoubtedly an investigator of great repute, and an authority on diseases peculiar to women, believes that trauma is important. He in fact insists that birth injuries stand first as etiologic factors. Catheter injuries and other accidents are advanced by Stoeckel,[26] Pleschner,[27] Hoehne,[28] Teleky[29] and others. Neoplastic pathologic changes are drawn on extensively, more particularly by Goldschmidt,[30] Heinrichsdorff,[31] Kleinwachter[32] and Teleky. In a careful review of these papers no great detail as to the pathologic condition is given, so that often one is left in doubt as to the exact lesion. Two new growths are particularly mentioned; one is caruncle, the other papilloma. The members of the London Obstetrical Society in the late eighties were

10. Otis, F. K.: Reflex Irritations and Necrosis Caused by Stricture of the Urethra in the Female, M. Record **41**: 34-37 (Jan. 9) 1892.
11. Kelly, H.: Stone in the Ureter, M. News **30**: 593 (Nov. 30) 1895.
12. Harris, Burton: Wax Tip Catheter in Diagnosis of Urinary Calculi, Surg. Gynec. Obst. **15**: 727-729 (Dec.) 1912.
13. Stevens, W. E.: Urology in Women, Tr. Sect. Urol., A. M. A., 1923, p. 81.
14. Pugh, W. S.: Stricture of the Female Urethra, Ann. Surg. **79**: 770-780 (May) 1924.
15. Hunner, G. L.: Intractable Bladder Symptoms Due to Ureteritis, J. Urol. **4**: 503 (Dec.) 1920.
16. Stevens, W. E.: Stricture of the Female Urethra, California State J. Med. **20**: 51-53 (Feb.) 1922.
17. Bugbee, H. G.: Frequency of Urination in Women, J. A. M. A. **68**: 693 (March 3) 1917.
18. Osgood, A. T.: Strictures of the Female Urethra, in Modern Urology (Cabot), Philadelphia, Lea & Febiger **1**: 364-366, 1920.
19. Stevens, W. E., and Arthurs, Elizabeth: The Female Bladder, J. A. M. A. **83**: 1656-1662 (Nov. 22) 1924.
20. Wynne, H. M. N.: Stricture of Urethra in the Female, Surg. Gynec. Obst. **34**: 208-214 (Feb.) 1922.
21. Meisel, W. A.: Ueber strigturen der weiblicher urethra, Wien. med. Wchnschr. **43**: 489-521, 1893.
22. Pasteau, O.: Etude sur le rétrécissement de la mal urethra chez la femme, Ann. org. génito-urin. **15**: 799, 1897.
23. Fischer, J.: Strikturen der weiblichen Urethra, Centralbl. f. d. ges. Gynaek. u. Geburtsh. **19**: 1039, 1895.
24. Herman, G. E.: Stricture of Urethra in Women, Tr. London Obst. Soc. **29**: 27-51, 1887.
25. Winckel: Handbuch der allgemeine und spezielle Chirurgie, in Billroth and Pitha: Die Krankheiten der weiblichen Blasen und Harnruhre, Dresden, 1885, pp. 137-139.
26. Stoeckel, W.: Die Erkrankungen der weibliche Harnorgan, in Veit: Handbuch der Gynäkologie, Vienna **2**: 293-1907.
27. Pleschner, H. G.: Die traumatischer Verletzungen des urogenitalen Apparat, Ztschr. f. urol. Chir. **3**: 412, 1917.
28. Hoehne, O.: Ueber die Behandlung einer schweren Katheterisms verletzungen der weiblichen Urethra, Ztschr. f. Geburtsh. u. Gynaek. **44**: 1081, 1920.
29. Teleky, D.: Traumatische Stricture der weiblichen Harnruhre, Ztschr. f. urol. Chir. **9**: 424-426 (July) 1922.
30. Goldschmidt, J.: Strictur und Verlagerung der Urethra bei einer Frau, Beitr. z. Geburtsh. u. Gynäk. **2**, sec. 10, 1874.
31. Heinrichsdorff, P.: Strickturen der weiblichen Urethra, Zentralbl. f. d. ges. Gynaek. u. Geburtsh. **44**: 1080 (Sept. 25) 1920.
32. Kleinwachter, E.: Einige Wort ueber Verengerungen der weiblichen Urethra, Ztschr. f. Geburtsh. u. Gynaek. **28**: 122-125, 1894.

impressed with the relatively frequent occurrence of lupus and lupetic ulceration in these cases as noted by Herman,[33] Duncan[34] and Gallabin.[35] The latter also mentions syphilis as a cause. In several of the papers presented at the London conference, some of the cases reported would seem to be more suggestive of syphilis than tuberculosis.

Bumm and Wagner, according to Wertheim,[36] mention congenital narrowing, senile prolapse and vesicovaginal fistula as not unusual factors.

It is in America that one hears most of the gonococcus in its relation to urethral stricture. Skene was of the opinion that the cause of stricture in the female was the same as in the male; in other words, the gonococcus was the cause in the vast majority of the cases.

Graves[37] speaks of gonorrhea as well, along with birth trauma as a factor. Kelly and Burnam,[38] and Osgood mention gonorrhea, syphilis and tuberculosis in the etiology. Hunner and others refer to focal infections as a possibility. In view of the great army of gonococcus infections which I have treated or supervised during the last twenty-six years, I am a bit skeptical of focal infections in connection with urethral disease. I agree with Stevens that focal infections must play a very small part.

In any discussion of etiology, if one considers the common conditions first, one will be less likely to err. When dealing with any condition of the genito-urinary tract, the gonococcus must not be lost sight of. Those of us who have been long in the struggle with this organism realize only too well its extensive distribution and its refusal to consider race, creed or social status.

In discussing gonorrhea in the female with physicians at a consultation, it is surprising how few of them think of a urethral infection as associated with a vaginitis. In my consultations I often see cases of gonococcus infection limited to the urethra, and many in which the urethral infection is overlooked entirely.

To what extent is a urethritis associated with a gonococcus vaginitis? In the literature, I find Brünschke[39] recording 90 per cent; Bumm and Brose,[40] 95 per cent; Finger[41] and his pupils, from 75 to 90 per cent; Fabry,[42] 52 per cent; Laser,[43] 33 per cent; Luczny,[44] 85 per cent; Schultz,[45] 78 per cent; Boye,[46] 88 per cent; Steinschneider,[47] 91 per cent; Welander,[48] 89 per cent, and Pryor,[49] 90 per cent. Of particular severity is the gonococcal honeymoon urethritis, in which the vagina is often not infected at all. I believe that the foregoing figures are sufficiently impressive, and stress the gonococcus as the chief factor in the disease under consideration. Another important point is that the gonococcus persists longest in the anterior third of the urethra, the most common location of stricture. Practically all of the so-called etiologic elements sink into oblivion when compared with the gonococcus.

Embryologic conditions may produce factors which, to say the least, predispose to urethral obstruction. This is rendered evident by the work of Bugbee and Wollstein.[50] In a series of eighty-six cases, there is a definite history of gonococcus infection in seventy-seven, chancroids in three, keloid in one, syphilis in one and vague etiology in four. One cannot escape from the impression that the doubtful cases are gonococcal infections.

PATHOLOGY

I believe, as noted above, that there is almost always an antecendent urethritis. Urethritis practically always becomes chronic; many are not seen and not cured. Our knowledge of the pathology is not extensive. The stricture formation, however, usually begins on the floor of the urethra, where the gonococcal infection has been most intense. From this point, the process will often encircle the entire urethra, and annular strictures are not infrequent. From our own examinations, we consider the strictures as being soft and dense. The Oberlander classification of infiltrations as soft strictures and hard strictures of the first, second and third degree may well be applied to the female urethra.

In traumatic or obstetric lesions there is the usual surgical pathologic condition of a crushing lesion. Ulcers and neoplastic conditions differ in no way from these lesions when situated elsewhere.

SYMPTOMS

In investigating urethral lesions, a careful history is of the utmost importance. This, however, is the point at which difficulties are usually encountered. We all know how difficult it is to obtain a venereal history, even in our better class of patients. This is undoubtedly incident to the hypocrisy which surrounds a discussion of sex matters in this country. It cannot be denied that many women suffer from gonorrhea for a long time without knowing it. A history of leukorrhea should always arouse the physician's suspicions. A history of childbirth injury or an operation following childbirth should be carefully noted. Urethrovaginal fistula is of particular import. Obstetricians tell us that apparently mild injuries sometimes produce these lesions; of this I am not convinced. A history of malignant disease, such as tuberculosis, or of scarlatina, typhoid or pneumonia, may be of assistance. One should not overlook the local use of cauterants or strongly astringent vaginal douches. The latter are particularly important at times.

Among the clinical cases reported are notes to the effect that the typical symptoms do not become marked until the patient notes an increased difficulty in emptying the bladder. This difficulty may sometimes be extreme. One would naturally expect this to occur, but it is by no means always the case, except in the late cases, with complete obstruction. In a number of cases, the symptoms will more strongly suggest abdominal and renal lesions. In others, the symptoms are apparently so

33. Herman, G. E.: Lupus of the Female: External Genitalia, Tr. London Obst. Soc. **29**: 27-51, 1887.
34. Duncan, J.: Ulceration of Lupus on Female Genitals, Tr. London Obst. Soc. **29**: 27-51, 1887.
35. Gallabin, A. L.: Stricture of the Urethra in Women, Tr. London Obst. Soc. **29**: 50-51, 1887.
36. Wertheim, Ernst: Stricktur der weiblichen Harnruhre, personal communication to the author, 1921.
37. Graves, W. P.: Gynecology, Philadelphia, W. B. Saunders Company, 1923, p. 273.
38. Kelly and Burnam: Diseases of the Kidney, Ureters and Bladder, New York, D. Appleton & Co., 1922, pp. 585-587.
39. Brünschke, F.: Gonococcal Urethritis in the Female, quoted by Stephenson, S., in Ophthalmia Neonatorum, London, Longmans, Green & Co., 1907, p. 81.
40. Bumm and Brose, quoted by Menge, K.: Handbuch der geschlectkrankheit, Vienna, 1910, p. 387.
41. Finger, H.: Blenorrhea der Sexual Organe, Handbuch der Urologie, Vienna, 1905, Part 14, p. iii.
42. Fabry: Ueber der gonorrhoisce Schleimhaut Affection beim Weibe, Deutsche med. Wchnschr. **14**: 876-878, 1888.
43. Laser, quoted by Findley, Palmer: Gonorrhea in Women, Am. Med. **11**: 387, 1906.
44. Lucxny, H.: Zur Pathologie und Therapie in weiblichen Gonorrhea, Berlin, Schade, 1891, p. 28.
45. Schultz.: Urethritis, in System of Gynecology Pozzi, New York, William Wood & Co., 1897, p. 24.
46. Boye, quoted by Finger, E.: Die Blenorrhea des Sexualorgans und ihre Komplikationen, Leipzig and Vienna, 1903, p. 300.
47. Steinschneider, quoted by Menge, K.: Handbuch der geschlectkrankheit, Vienna, 1910.
48. Welander, quoted by Menge, K.: Handbuch der Geschlectkrankheit, Vienna, 1910.
49. Pryor, W.: Gonorrhea of External Genitalia in Women, Am. J. Obst. & Gynec. **34**: 384, 1896.
50. Bugbee, H. G., and Wollstein, Martha: Surgical Pathology of the Urinary Tract in Infants, J. A. M. A. **83**: 1887-1892 (Dec. 13) 1924; Urethral Obstruction in Infants, J. Urol. **10**: 477 (Dec.) 1923.

remote from the urinary system that one may be inclined to class these patients as neurotic.

The retention of urine by women for long periods is so common that they often think a retention is natural. Far more do women complain of dribbling (really an incontinence of retention) than they do of obstruction. Slight obstruction is, however, often sufficient to produce a marked cystitis and urinary changes. Some writers believe that symptoms of ureteral stricture occur earlier in women than they do in men. This remains to be proved.

In my cases, the symptoms impressing me as of most importance were dysuria, urgency and frequency. Signs of a toxemia were also not infrequent. A series of cases reported by Stanton [51] are of particular interest. The symptoms in his group were often referable to the upper urinary tract, and they bring out the relationship between the urethra and kidneys through the sympathetic nervous system. This syndrome has been little noted before, but I have seen it in many of my patients. I have learned that there are no classic symptoms in urethral stricture of the female. If, however, a careful history is taken and a careful, complete urologic examination is made, the lesion will usually be located. When a male patient comes into my office, I never fail to make a careful urethral examination, using a bulb whenever practicable. Do physicians examine the female in the same way? The answer is, the gynecologist never and the urologist rarely. It should always be done, the bulbous bougie being used for the purpose. Most of them will be missed with a metal sound.

Urethroscopy is always indicated in urinary lesions of the female. It is seldom done, however, even by our most experienced technicians. When I am able to use a small urethroscope, I find at times that it meets an obstruction, and on withdrawing it the lesion is definitely seen. Hard infiltrations will at times grasp the instrument rather firmly.

In my hands, the roentgen ray, as a diagnostic medium, has not been at all satisfactory. It is hoped that later the new technic of urethrography will facilitate the diagnosis.

DEFINITION OF STRICTURE

I now arrive at the point which probably will cause most discussion: What do we consider a stricture? Students of anatomy are wont to speak of the female urethra as a musculomembranous tube of about 2.5 to 3 cm. long, and generally about 7.5 mm. in diameter. Its greatest width is midway in its course, where the dilatation is somewhat spindle shape. It is naturally important to consider the average normal size of the canal at its narrowest point. This particular area, in the experience of most observers, is just within the external urinary meatus.

Herman found that the urethra in fifty-six patients between the ages of 18 and 70 varied between 7 and 12 mm. in diameter. Van de Warker believes that a urethra taking a bulb less than 16 F. is abnormal. Stevens, speaking from a large experience, tells us that strictures above 18 F. will often cause symptoms, and he regards 26 F. as normal. His list of averages is interesting. In 114 patients in whom the urethra averaged 22 F., he states that the lesions were quite apparent. The smallest stricture noted by Stevens was filiform.

51. Stanton, E. M.: Renal Colic Associated with Urethral Lesions in Women, Am. J. Obst. & Gynec. 5:72 (Jan.) 1923.

In my first report, I stated that none of my patients took above a number 18 F., and all had symptoms. Since then I have seen several cases in which the caliber was above 18 F. and which were undoubtedly strictures. I believe that Bugbee is quite conservative and that Stevens is none too radical. Urethral lesions in the female are usually of the soft, yielding variety; dense forms are rare. This undoubtedly accounts for many of them being overlooked. I will discuss this in detail, later.

The accompanying table of eighty-six cases represents rather well the average caliber of the strictured urethra encountered in my cases.

Average Calibers of Uretheral Strictures in Females

Filiform stricture	1
No. 8 F.	3
No. 12 F.	10
No. 14 F.	21
No. 16 F.	17
No. 18 F.	13
No. 20 F.	11
No. 22 F.	10
Total	86

LOCATION

The lesion may involve the entire urethral canal or be situated in any one portion. The involvement of the anterior urethra, particularly at the meatus, is decidedly the more common. A series of cases collected by Wynne show four involving the entire urethra, nine at the external meatus, fourteen in the anterior third, seven in the middle third and four in the posterior third. In my own series of eighty-six cases, the locations were as follows: external meatus, fifty-two; anterior third, twenty-four; middle third, three, and posterior third, seven.

DIAGNOSIS AND PROGNOSIS

Stricture of the female urethra as a definite entity must be recognized. Its effects are similar to those in the male, and one sees all forms of obstructive effects. Dilatation of the bladder, ureters and renal pelvis certainly occur and perhaps even the pyelovenous backflow of Hinman. The diagnosis should present no difficulty. Inspection, palpation, the use of the bulbous bougie or olive tip and the urethroscope should leave no doubt. The prognosis depends largely on the etiologic factor. Soft infiltrations usually respond well to treatment. The hard infiltrations are always a source of doubt, as are those in the male.

TREATMENT

The female urethra is a delicate and very sensitive organ, a fact that must be considered in its treatment. Treatment is essentially dilation, of which two forms may be considered; i. e., gradual and modified rapid. Other methods, such as rapid dilation and electrolysis, have been mentioned but need not be considered. These procedures, it will be understood, apply to those cases in which complete obstruction does not exist. In the completely obstructive types, internal and external, urethrotomy as well as resection has been performed. If the stricture has been found to be very soft, as detected by the bulb, careful modified rapid dilation may be employed. This method necessitates the use of general or caudal anesthesia. When modified rapid dilation is employed, it is not advisable to go beyond five points in one sitting. I once saw a prominent gynecologist use a pair of forceps in an attempted rapid dilation, with severe hemorrhage resulting. I myself

should never recommend any form of rapid dilation. Gradual dilation is always best, and should begin with the largest sound or bougie that will pass the stricture. An increase of two numbers a week should be made until no. 26, which is about normal, is reached. It will, however, do no harm to go a little beyond this. After the foregoing procedure, a large dilator should be passed once a month for a year, and at intervals even after this.

In dealing with the dense infiltrations, one must be a little more cautious. The yielding of the tissues is much less, and possibilities of bleeding and infection are greater. I have always succeeded in dilating a hard stricture, but it takes a longer time and they are liable to recur. Kelly has instructed this class of patients how to pass the sound, so that they can do it at home. I cannot recommend this procedure.

In cases of filiform types and complete obstruction, it may be necessary to resort to operative procedure. In the former, I have passed a filiform bougie, and over this a Rand tunneled knife with five blades is threaded. The stricture is then incised on the floor. In the complete obstructive types, retrograde catheterization through a cystotomy would seem to be the procedure of choice. This, however, is rarely a necessity. Hoehne has reported several cases in which this procedure was employed with success. Osgood has recommended vaginal urethrotomy.

In the treatment of strictures due to neoplasms, when the removal of the mass is impracticable, radium may be employed. I have recently had one case in which I was apparently successful. Two weeks after leaving the hospital, the patient died of apoplexy, evidently a metastatic condition. Kelly and Burnam, while advising radium in some cases of urethral stricture, state that they have had no actual experience with it. There are a number of measures advocated for the treatment of this disease which I have not mentioned, the reason being that they are obsolete. A long experience with urethral lesions has taught me always to try the simple remedies. When applied with gentleness, they are usually productive of the best results.

SUMMARY

1. Stricture of the urethra in women is common.
2. The principal cause is a gonococcal infection.
3. The pathologic changes are quite similar to those of the urethral stricture in the male.
4. Its most common location is at the external meatus.
5. The most common symptoms are frequency, urgency and dysuria.
6. The diagnosis may always be established by the olivary tip or the bulbous bougie.
7. Prognosis is good in soft infiltrations, while that of dense strictures is doubtful.
8. Treatment is by gentle dilation. Operative procedures should be avoided if possible.

30 East Fortieth Street.

Big Business and Preventive Medicine.—Approximately 12,000 negroes are employed by the Pullman company as porters. Before a negro is taken into the service of the Pullman company as a porter he either must be vaccinated or show evidence of a recent successful vaccination. The physician making the examination must satisfy himself that a vaccination scar is less than five years old. If older than this at least one attempt at reinoculation is required. Applicants also must be examined as to physical fitness.—*J. Indiana State M. A.* **19**:459 (Nov. 15) 1926.

COHABITATION, COLON BACILLARY, URINARY TRACT INFECTION *

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LOS ANGELES

Pyelonephritis with the colon bacillus as the infecting agent following attempts at coition, especially in newly married women, probably occurs with greater frequency than the scant literature of the subject would indicate.

In 1897, in a comprehensive clinical and experimental review of infection of the urinary tract, Rovsing [1] reported three cases of young women, recently married, who immediately after tentative coitus had frequency, dysuria and pain in the renal area. The colon bacillus was isolated from the urine in all cases. Wildbolz,[2] in 1912, also called attention to cases of colon bacillus pyelitis occurring in newly married women which he attributed to an ascending infection starting from small wounds consecutive to rupture of the hymen. Sippel,[3] writing in the same year, says that he frequently observed similar cases, many of which are transient, being either overlooked or made evident only by symptoms of cystitis. Braasch [4] has repeatedly called attention to this condition in cases under treatment at the Mayo Clinic.

In some cases, as stated by Sippel, the infection may be very light and pass unnoticed, or the patient may have a mild dysuria and transient frequency. On the other hand, there may be very violent urinary symptoms together with high temperature, severe costovertebral pains and marked prostration. An irregular fever may be present, at times associated with chills and other signs of pyelonephritis. The urine, which gives the most valuable diagnostic indication, is practically always cloudy, and contains pus and numerous colon bacilli. This bacillus, as is very frequently the case in ordinary kidney pelvis infections, was present in the majority of the reported cases of cohabitation infection in which the infecting organisms were isolated; Kidd [5] found it present in 117 of 140 cases of pyelonephritis from all causes. Wildbolz states that the infection at times is unilateral and right-sided. In the early stages the urine obtained on ureteral catheterization usually contains both pus and colon bacilli.

Some cases of cohabitation pyelonephritis unquestionably cause few symptoms, remaining latent and unrecognized in young married women for years, but later they may play an important rôle in the production of the pyelonephritis of pregnancy. Inoffensive at first when there is no obstruction to the urinary stream, the contamination assumes clinical importance when some mechanical obstruction, such as pregnancy or stone formation, produces stasis in the urinary tract. Sippel cites a case in which the colon bacillus urinary infection persisted for twelve years without any evident harm but was the cause of a severe suppurative pyelonephritis following the production of a ureteral kink by a mobile kidney.

I have observed two cases of cohabitation colon bacillus infection of the upper urinary tract; and, as the literature on this subject is rather scant, it should be

* Read before the Section on Urology at the Seventy-Seventh Annual Session of the American Medical Association, Dallas, Texas, April, 1926.

1. Rovsing, T.: Etudes cliniques et expérimentales sur les affectious infectieuses des voies urinaires, Ann. d. mals d. org. gén.-urin., 1897, pp. 897-968.
2. Wildbolz, H.: Cor.-Bl. f. schweiz. Aerzte **1**: 1912.
3. Sippel, A.: Aufsteigende Infektion der Harnwege bei frisch verheirateten Frauen, Deutsche med. Wchnschr. **38**: 1138, 1912.
4. Braasch, W. F.: Personal communication to the author.
5. Kidd, Frank: Urinary Surgery, Longmans, Green & Co., 1910.

of interest to report the clinical details of these cases somewhat fully. The cases are examples of the two extremes of infection; the first, at the onset, was almost fatal and markedly resistant to all types of treatment; in the second, the infection was of short duration with mild symptoms, and it responded to simple treatment.

REPORT OF CASES

CASE 1.—*History.*—Mrs. S. E. S., aged 22, had been having chills, fever, and frequency of urination, and had lost weight. She had suffered from moderate constipation for ten years, and frequently used cathartics during the past few years. Five years before she had had diphtheria; otherwise she had been quite well. She stated that up to the present time the urine had been clear, and that she never had frequency, dysuria or nocturia. There had been no serious illness in her family that might have a bearing on her present condition. Her menstruation was normal.

The patient had been married two weeks before. Coitus was extremely painful and was attended by moderate bleeding, together with residual soreness and discomfort in the perineum and bladder region. Ten days after the first coitus, she had a sudden onset of chills, fever, headache, and pain in the lumbar region. Two days later menstruation started, and her symptoms became more severe. There was only moderate frequency and dysuria, but for fourteen days she had severe chills which alternated with a fever of from 102 to 104 F. She felt nauseated, weak and extremely dull mentally. The urine on examination was found to contain a large quantity of pus, and small amounts of methenamine were given. Owing to the nausea, the stomach could only retain fluids.

Examination.—When first seen, two weeks after the onset of her illness, the patient was markedly emaciated, weighing only 87 pounds (40 Kg.). One month previous she weighed her average weight of 105 pounds (47.6 Kg.). The temperature was 102 F. and the pulse rate 94. Her lips were covered with sordes and the tongue was thickly coated, brown and dry; the eyes were sunken; the patient was very lethargic, not apparently knowing or being interested in anything done to her, and it was only with difficulty that she could be forced to take water or medicine. The reflexes were normal. Pain was complained of on deep palpation in the left upper quadrant of the abdomen and in the left costovertebral region. Neither kidney could be felt. The vaginal introitus was very narrow, resistant to manual examination, and high in the perineum. The urethral orifice was normal.

The urine was alkaline, containing a large amount of pus and numerous motile, colon-like bacilli; no albumin or sugar was present. The blood contained 15,000 leukocytes per cubic millimeter, and the phenolsulphonphthalein return was 60 per cent in two and one-fourth hours. A roentgen-ray examination of the kidneys, ureters and bladder revealed nothing abnormal.

The cystoscope entered the bladder easily and without pain; the urethra was slightly reddened. The bladder mucosa, especially in the region of the trigon, was red and inflamed; many small flakes could be washed up from the base of the bladder. Both ureteral orifices appeared normal, and a no. 5 flute-tip catheter was readily passed into each ureter. There was no retention, but the urine, which dripped freely, was cloudy; the urine from both the right and left kidneys contained more than 50 pus cells to each high-dry, microscopic field, together with numerous motile bacilli. A culture was made of the colon bacillus from the urine from both kidneys.

Treatment.—Five cubic centimeters of a 1 per cent solution of mercurochrome-220 soluble was injected into each kidney pelvis and the catheters were left in place. Twelve hours after the insertion of the catheters, the patient was brighter and felt much better; the temperature dropped from 104 to 98 F. and remained at a normal level or below during the remainder of her stay in the hospital. Fluids were forced to 3,000 cc. daily by mouth and rectal drip, and the patient was given 15 grains (1 Gm.) of methenamine combined with an equal amount of sodium acid phosphate three times daily. The catheters were left in place four days, during which time 5 cc. of a 1 per cent mercurochrome solution was injected three times daily. Cultures taken before removal of the catheters, ten hours after the injection of the antiseptic, were negative. Three days after cystoscopy the patient had a good appetite and felt quite well, but for eight days she was too weak to get out of bed or hold her head up for more than fifteen minutes at a time. Seven days after removal of the catheters they were reinserted, and the urine from both kidneys again contained a large number of pus cells and colon bacilli. Two months after the onset of her illness the urine from both kidneys was sterile, although from 6 to 8 pus cells were present in every microscopic field. The function of each kidney was normal in appearance, time and amount; a pyelogram of each kidney, taken on different days, was also normal. During this two months the renal pelves had been lavaged every two weeks and the bladder from one to three times weekly. The patient had regained her normal weight, felt perfectly well, and had no symptoms of renal infection except nocturia once or twice nightly. Eight months after the first examination, the urine from each kidney still contained a few pus cells, and the bladder urine contained from 20-30 pus cells to each field, but urine cultures from the bladder and renal pelves were negative.

CASE 2.—*History.*—Mrs. P. A. R., aged 28, married two years, was quite nervous, had been operated on for a thyroid adenoma one year before examination, and was now busy in the pursuit of her career as a singer. Menstruation, which began when she was 10 years of age, was painless and normal in amount and duration; she had never been pregnant.

Her husband had been traveling for several months, and had returned ten days before. Following painful, forceful coitus the patient had slight bleeding, but she was not certain whether it was from the urethra or the vagina; she stated that it appeared on urination. Coitus had always been painful, infrequent and entirely undesirable on her part; it was always extremely difficult, and sufficiently drastic to cause the husband to consult his physician for penile excoriations.

Eight days after this last intercourse, the patient developed a deep seated pain in the region of the bladder; several days after this she developed a moderate frequency of urination and dysuria. There had been no chills, fever, lumbar pain or general malaise, and she had had no previous attacks of the same kind.

Examination.—A general examination revealed nothing abnormal. The vagina was small, tight and difficult to examine; there was an infantile uterus and an atrophic cervix. The urethra was normal.

A catheterized specimen of urine contained a moderate number of pus cells and colon bacilli. From 20 to 25 pus cells were found in every high-dry, microscopic field. No sugar or albumin was present, and the urine was acid in reaction. The phenolsulphonphthalein return was normal, and a roentgenogram of the kidneys, ureters and bladder revealed nothing unusual.

A cystoscopic examination showed that the urethra was normal. Several areas of inflammation were found on the base and fundus of the bladder. The ureteral orifices were apparently normal, ejecting regular spurts of normal appearing urine. Both ureters were catheterized and specimens of urine obtained which contained pus in small amounts and numerous motile, colon-like bacilli. Cultures were not made.

Treatment.—Both renal pelves were washed with a 1 per cent solution of mercurochrome. The patient was given 10 grains (0.6 Gm.) each of methenamine and sodium acid phosphate three times daily, continued for eight days. Two days after cystoscopy the bladder was washed with a 1:1,000 solution of mercurochrome. Following this, the patient had no further trouble. Her mild frequency, pain in the bladder area and general discomfort entirely disappeared. One year later she was perfectly well.

COMMENT

The infection in both these cases occurred in women to whom coitus caused trauma and was painful. Rovsing and Wildbolz both consider that such infections start from small wounds in the ruptured hymen. This is probably not true in all cases, since occasionally, as in case 2, it occurs long after the hymen had been completely ruptured. No case was found reported in

the literature in which this type of infection occurred in a woman who had borne children. Sippel does not, however, think that this ascending infection results from small vulval ulcerations, but that women who show the condition have a high perineum, which is tense, a narrow rigid vaginal orifice, and a urethral outlet somewhat behind the vaginal orifice; these women usually have only slight vulvar lesions, but are rebellious to the painful manipulations of examination just as they are rebellious to coitus. The conditions appeared particularly evident in the second of my two cases.

TRAUMA AND INFECTION

In the pathogenesis of ascending urinary infections following coitus, traumatism plays a very important rôle. It predisposes to infection, and the colon bacillus is the most frequent invader.

Under certain circumtances the urethral orifice may readily be bruised during intercourse, which favors the entrance of colon bacilli into the urethra. It may not be necessary for the bacillus to make entrance from the external genitalia, because sometimes it may already be present. Savor [6] found the colon bacillus present in fourteen of 142 bacterial examinations of the urethra in apparently healthy women. Occasionally colon bacteriuria may be already present; this occurs more commonly in women suffering from constipation. Dudgeon [7] found the colon bacillus in the urine in three of twenty women who had habitual constipation. In the urine of twenty normal persons there was no infection.

Trauma permits the infection to gain a foothold, and, apparently, injury to the bladder itself is essential to the upward spread of the infection. Rovsing states that, experimentally, cystitis could not be produced in animals without retention or trauma. Bauereisen,[8] dealing with the tubercle bacillus, states that a bladder with an intact mucosa cannot be infected.

Rovsing and Melchior [9] found that in experimental animals trauma to the bladder with or without retention of urine produced pyelonephritis. Hess [10] stated that obstruction or slight change in the urinary apparatus was necessary for an ascending involvement, the infection being carried both by the ureteral lumen and by the lymphatics. He injected turpentine into the urinary bladder of laboratory animals, and then added a culture of colon bacillus; in the animals, inflammatory areas and abscesses developed in the kidneys. In control experiments in which colon bacilli were injected into uninjured bladders, negative results were obtained. David [11] also found that injection of colon bacilli into bladders traumatized with turpentine was usually followed by a cellular exudate in the submucosa and muscularis; this did not occur if the bladders were normal before the injection.

ROUTES OF INFECTION

After extensive clinical and experimental work on urinary infection, Sutur [12] states that infection can enter the urinary tract either through the blood stream or directly through the urethra. The urethral route causes an infection of the bladder first, then later of the renal pelvis. Rovsing states that infection may possibly spread from a ruptured hymen to the kidney. It is probable that in the majority of cases the bladder is primarily infected, the infection being then carried either by the blood stream or the lymphatics, or it may progress by direct ureteral extension.

(*a*) *Hematogenous Infection.*—The contention of Rovsing and Wildbolz that the urinary infection gains entrance through small wounds of the ruptured hymen presupposes that the infection is carried at least part of the way by the blood stream. Sampson [13] states that there is an arterial anastomosis between the bladder and the kidney. Hundley,[14] in a recent paper on pyelitis, cites the work of Embleton and Thiele in which it was demonstrated with laboratory animals that infection of the kidney occur by way of the blood stream, and that infections by way of the lymphatics is uncommon. Cabot and Crabtree,[15] speaking of urinary infection, state that "assuming the probable fact that organisms reach the lymphatics about the bladder and over the lower segment of the ureter, the probability of their reaching the blood stream rather than continuing in devious lymphatic channels seems to be overwhelming." The organisms probably pass from the bladder into the perivascular lymphatics, reaching the blood stream and ultimately the kidney.

Undoubtedly, in certain cases, bacteria, after developing in the traumatized bladder or gaining entrance through vaginal abrasions, have a definite selective power of localization in the kidney and are borne by the blood stream. Helmholz and Beeler [16] found a rabbit with pyelonephritis in the course of experimental work in controlling the urine of animals prior to injection. Cultures from this source, injected in thirty-two rabbits, produced lesions of the kidney in twenty-five; in only three were other organs involved. Bumpus and Meisser [17] injected eighty-two rabbits from material obtained from the teeth, tonsils, urine and blood of patients having pyelonephritis; in sixty-three of the animals, lesions of the kidney were found.

(*b*) *Lymphatic Infections.*—There is a definite lymphatic connection between the lymphatics of the external genitalia and organs in which the colon bacillus normally occurs. Poirier [18] showed that the lymphatics of the urethra, vagina and bladder drained into the same glands, the middle and external glands of the external iliac chain as well as into the glands of the sacral promontory. There is also a free communication of the lymphatics of the rectum and those of the vagina; the main lymphatics of the rectum drain into the hemorrhoidal gland, and thence join the lymphatics of the bladder and urethra in the external iliac chain.

Using fresh ureters of still-born infants, Bauereisen demonstrated lymphatics in the mucosa. From a series of studies on renal tuberculosis he concludes that infection is carried first to the lower ureteral segment and then wanders toward the kidney in the peri-ureteral lymphatics. David, in his work on animals with

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16. Helmholz, H. F., and Beeler, C.: Ascending Infection of the Urinary Tract, Tr. Am. Pediat. Soc. **30**: 196-199, 1918.
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18. Poirier, P.; Cuneo, B., and Delamere, G.: The Lymphatics, W. T. Keener & Co., 1904.

bladders traumatized with turpentine, found an edema and polymorphonuclear infiltration which involved the entire coat of the ureter and pelvis and in one instance caused a polymorphonuclear exudate in the kidney. The colon bacillus was isolated from the pelvic urine on this side. Schultz and Eisendrath [19] believe that infection travels in the submucous and perivesical lymphatics, and then by way of the lymphatics of the ureter to the submucous lymphatic vessels of the renal pelvis. Graves and Davidoff,[20] after a study of the lymphatics, state that there is no direct lymph channel between the bladder and kidneys, and that lymphatic communication, if it exists, must be either through anastomosis between the lymph capillaries in the different levels of the ureter or through anastomosis between the lymph nodes draining these areas.

(*c*) *Infection by Ureteral Extension.*—The clinical work of Kretschmer [21] and Bumpus [22] on regurgitation has shown the frequency and at times the comparative ease with which ureteral reflux occurs. Graves and Davidoff found ureteral regurgitation in 73.7 per cent of eighty normal rabbits when the bladder was filled with physiologic sodium chloride solution. The phenomenon depends on several factors, the chief of which, good bladder tone, is indispensable. They state that regurgitation of vesical contents into the ureter may be observed in the normal, intact, nonanesthetized subject; Wislocki and O'Conor [23] observed the same phenomenon. Quinby [24] states that regurgitation can take place with only a few millimeters of pressure, and that the intregrity of the ureterovesical valve is lost much earlier in the presence of infection than it is in cases of obstruction only. Draper and Braasch,[25] working on the production of ascending renal infection, failed to cause ureteral regurgitation except by maintaining an abnormal amount of pressure in the bladder for a long period of time.

Summing up the results of different investigations, it appears probable that in most cases of cohabitation pyelonephritis, there is an existing infection of the bladder; clinically, the condition is the same whether there is a direct extension through the ureter or whether the infection reaches the kidney through lymphatic or vascular connections. There is probably no one constant route of infection. At the present time experimental work is being done to determine more definitely the path of infection in cases of this type.

TREATMENT

A cohabitation urinary, colon bacillus infection, similar to urinary infections developing from other sources, may disappear without medication or other treatment. At times the infection persists despite extensive treatment; one of Rovsing's patients had colon bacilli and pus in the urine three years after a postnuptial infection. Sutur states that once the colon bacillus has established itself in the urinary tract there is small chance of its ever disappearing.

In the majority of cases, the ingestion of a proper amount of a urinary antiseptic may be sufficient to control the patient's symptoms, particularly when the infection is mainly in the lower urinary tract. In some cases, even when an extensive infection is present, the one insertion of diagnostic, ureteral catheters and pelvic lavage with a urinary antiseptic gives relief. When the infection has persisted for some time, treatment must be instituted similar to that employed in cases of subacute or chronic pyelonephritis, arising from any cause. When there is retention in the renal pelvis, no matter how slight, the benefit from ureteral drainage is marked.

Fulminating symptoms such as occurred in case 1 of this series are unusual, and the semipermanent drainage used will only rarely be necessary. In this case, drainage of the renal pelves and applications of a urinary antiseptic were absolutely necessary; as the patient was too ill to permit repeated cystoscopic manipulations, the ureteral catheters were left in place; this did not cause trouble, and proved to be a satisfactory method of drainage and a means of frequently applying urinary antiseptics to the renal pelves.

A satisfactory method of prophylaxis or prevention of cohabitation urinary infection has not yet been determined. At present the early recognition and prompt institution of treatment are the only means of controlling this condition, and they may prevent the formation of a deep-seated urinary infection. When well established, such an infection has the chronicity and resistance to treatment commonly found in cases of pyelonephritis.

SUMMARY

A colon bacillus pyelonephritis occasionally develops in newly married women following tentative coitus. The infection usually occurs in women with whom coitus is difficult and painful; it may be light, transient and unrecognized, or it may cause all the symptoms usually observed with a severe urinary infection. The colon bacillus probably enters the tract either through small wounds in the ruptured hymen or through the urethra, which may have been traumatized. The most probable mode of extension to the kidney is by the blood stream or by ureteral regurgitation. Once established, postnuptial pyelonephritis of this type assumes the properties of chronicity and resistance to treatment usually observed in the more common types of pyelonephritis.

Pacific Mutual Building.

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ABSTRACT OF DISCUSSION

ON PAPERS OF DRS. PUGH AND SCHOLL

DR. WILLIAM E. STEVENS, San Francisco: I was very much pleased to hear Dr. Pugh emphasize the importance of stricture of the female urethra as an etiologic factor in urinary tract disturbances in women. Several years ago, at a meeting of this section, I mentioned the frequency of urethral strictures in women and female children, and one of our colleagues commented that it seemed like another case of Hunner and ureteral stricture. Some of us may be overenthusiastic at times, but I believe that overenthusiasm at least serves the useful purpose of calling attention to conditions that might otherwise be overlooked. Herman of London concluded from his investigations that the normal size of the adult female urethra is that of a 29 F. bougie, a little less than 10 mm. As a result of the examination of the urethra in a number of women who have never complained of urinary disturbances, I have come to the conclusion that a 26 F. olive tipped bougie can be inserted and withdrawn without meeting an obstruction in a large majority of cases. As Dr. Pugh has stated, stric-

tures are more often found in the anterior third of the female urethra, and they are more common in women who have suffered from gonorrhea. In the examination of a large series of prostitutes, almost all of whom had suffered from gonorrhea, the percentage of urethral strictures was greater by 12 per cent than in any other group of clinic or private cases. The obstruction was almost invariably found in the anterior third of the urethra. The olive tipped bougie is the instrument of choice for urethral calibration. If a sound or dilator is used, many strictures, especially soft infiltrations, will be overlooked. Practically all of my patients complain of frequency of urination. Many suffer from pain which is often referred to the inguinal, sacral or lumbar regions. I agree with Dr. Pugh that very few of these patients require operation. Occasionally, meatotomy or urethrotomy is necessary, but as a rule strictures of the female urethra respond readily to gradual dilation.

DR. WILLIAM F. BRAASCH, Rochester, Minn.: The subject of traumatic pyelonephritis should interest us all, because trauma following cystoscopy or urethral catheterization is occasionally an etiologic factor of acute pyelonephritis. The avenue of renal infection in these cases has not been fully determined. In the male, the possibility of blood stream infection from the prostatic plexus must be considered. In the female, one cannot so logically do so. I am inclined to believe that the infection is an ascending one and extends from the traumatized urethra and bladder to the kidneys directly through the ureter. This theory is made more tenable by the recent work of Quinby and his associates regarding ureteral regurgitation. As to treatment, as a rule most cases are self-limiting. Occasionally, however, the fever is very high, the symptoms are alarming, and the usual treatment is without value. In such cases ureteral catheters should be inserted, with lavage, and allowed to remain several days if necessary. In two cases of traumatic pyelonephritis observed in the last year, we have employed intravenous injections of mercurochrome-220 soluble with remarkable results, when all other methods failed. It has been our experience that mercurochrome can be used in a very much more dilute solution than was formerly supposed. We are now using 10 cc. of a 1 per cent solution intravenously following the injection of 500 cc. of physiologic sodium chloride solution. In most cases the results are as good as when the larger doses are used and without the toxic reaction. The treatment is particularly efficacious when the blood cultures are positive.

DR. VICTOR G. VECKI, San Francisco: When in Frankfort during the summer of 1925, I was told at the Herxheimer clinic that they use intravenous injections of sulpharsphenamine for the treatment of pyelitis, and Herxheimer himself told me that the results are mostly very good. I have used the sulpharsphenamine intravenously in several cases of pyelitis and came to the conclusion that it is in every respect preferable to mercurochrome, mainly because there is never any danger or any complication or severe reaction. Sometimes as many as four injections, one every other day, must be given, but in a number of cases one or two injections are sufficient to effect a cure. Some cases do not yield to the sulpharsphenamine injections, and they probably would not yield to the mercurochrome either.

DR. HERMAN L. KRETSCHMER, Chicago: The most important part in the discussion of Dr. Scholl's paper is the statement that the patients show symptoms immediately after marriage. In view of this fact, many of the patients are told that they have been infected with the gonococcus, which wrongly accuses the husband and has been followed with dire results. It is important not to jump at wrong conclusions and to assume that every newly married woman who has urinary symptoms has gonorrhea. I believe that it is important that we consider this type of pyelitis as an entity, for no other reason than not wrongly to accuse a newly married couple. As Dr. Scholl said, this condition is not new, having been described by Rovsing, Sippel, Wildbolz and others. I agree with Dr. Braasch that most of the cases are self-limited, and we have treated them as one treats any case of acute pyelitis. We have not found it necessary to treat them with intravenous injections, as Dr. Braasch does, because in our experience they did not last long enough. Regarding Dr. Pugh's paper, I agree that strictures very often produce bladder symptoms, and that many times we overlook them. We are all familiar with the fact that many of these patients come in for examination and are subjected to cystoscopy, following which the local symptoms disappear; this, no doubt, is due to the dilation antecedent to cystoscopy.

DR. BRANSFORD LEWIS, St. Louis: When I was young in the profession I was taught that while strictures in the urethra were quite common among men they were rare in women. My own observations and those of Dr. Pugh have left the impression that women have come into their own: Instead of being our superior in this matter I believe they are almost our equal in the frequency with which they have urethral strictures. This is interesting not only from the standpoint of pathology but in the cases of chronic cystitis which are so common among women and for which irrigations are widely used; a condition, in many cases, which is not cystitis but urethrotrigonitis, with narrowing of the urethra. There is a symptomatology which often lasts for many years. In one case in my experience it lasted for thirty-eight years, and the patient had never had the slightest relief for this trouble. When the narrowing of the urethra was found and dilated, she had her first relief. The practical benefit from these papers of Dr. Scholl and Dr. Pugh comes from the fact that they should bring about a more frequent and earlier recognition of obstruction in the urethra in women.

DR. T. LEON HOWARD, Denver: It is my opinion that strictures are a very common occurrence in women and cause many bladder symptoms. I have heard many women who have borne children complain of painful and frequent urination, especially during the day. Examination reveals either a stricture or a general contraction of the entire urethra. When there is a definite stricture in this class of strictured patients, it is found in the third of the urethra nearest the bladder sphincter. In women who have strictures due to gonorrhea it has been my experience to find them in the outer third of the urethra, and I think this is due to the fact that Skene's glands are practically always affected and the gonococci are deeply implanted in the periurethral tissue at that point, causing considerable round cell infiltration, with stricture formation afterward. Strictures following delivery are traumatic in character, due to trauma caused by the child's head pressing on the urethra under the pelvic arch, or by laceration of delivery with forceps.

DR. ALFRED I. FOLSOM, Dallas, Texas: Dr. Kretschmer sounded an important note in connection with the first paper in calling attention to the fact that many of these patients are accused of having gonorrhea. I have recently gone through an experience like that, when there was no ground for it whatever. The trouble was purely traumatic and had no connection with gonorrhea. The man had never had gonorrhea, but it almost caused serious trouble. In connection with the second paper, I think it is timely to call attention to the fact that we overlook many things in connection with the female urethra. I wish to add that if, in addition to feeling for the strictures of the urethra, one will put in a cysto-urethroscope and look, one will be surprised and shocked to find how many little coarse nodules there are around some urethras. One is simply treating half the trouble if one puts in a sound and stretches the urethra. I have had several cases in which these little proliferations have given rise to acute retention. It has been my habit to fulgurate these lesions in the same manner as we do in the male. The cause for these urinary disturbances is frequently thought to be a pelvic malposition, and the treatment is based on that assumption. I do not know of any type of case that is more frequently misunderstood than the type described in the paper. The gynecologists operate for everything in the pelvis, and the patients still go along with the bladder disorder. They will have it until these strictures in the urethra and the urethral inflammation are cleared up. I think it is the obligation of this section and of urologists throughout the country to get this clearly before the profession. These cases are not due to malposition of the pelvic organs but to actual pathologic conditions of the female urethra itself.

DR. WINFIELD S. PUGH, New York: In regard to Dr. Folsom's remarks, the polypus conditions at the urethral neck are very common. We have recently had a case in which the only symptom was frequency, and we found numerous polyps at the vesical neck. In presenting this paper it was my intention not only to stress stricture of the female urethra, but to draw attention to the great importance of the female urethra and the fact that it is often overlooked. In a series of 133 cases of gonococcus infection there were only thirty in which the urethra had been examined, although these patients had been through the hands of urologists as well as general practitioners. All types of inflammation and infection are likely to go on to stricture formation. I think there is no doubt of that. In many instances, Skene's glands are infected, but I do not think all the cases are due to that. This disease carries with it the whole group of obstructive anopathy that we see in the male. We frequently see diverticula that may not be due to the stricture, but certainly are accentuated by its presence. We see associated dilatation of the ureter and of the pelvis of the kidney. We miss these strictures of the urethra because we have always been looking for and centering our attention on the big, spectacular things in the kidneys and bladder. Strictures are easy to diagnose by means of the urethroscope and the bulbous bougie. When found they are as a rule easily cured, and we have a well pleased patient who has usually gone on for many years with the trouble in the urinary tract before finding relief.

TWO FACTORS IN CATARRHAL DEAFNESS

THE LOWER TURBINATE (TECHNIC) AND SPHENOIDAL SINUS (ANATOMY) *

GREENFIELD SLUDER, M.D.
ST. LOUIS

Hypertrophy of the lower turbinate has long been known to be a most potent factor in catarrhal deafness (obstruction of the eustachian tube). Otologists have for many years amputated the posterior hypertrophy by means of a cold snare, and this has frequently been a satisfactory procedure; but there are other cases in which the result may be obtained even after cold snaring has failed. The procedure for this purpose consists in the destruction of the soft tissues of the posterior tip of the turbinate by means of the galvanocautery. One incision is made under the tip, another

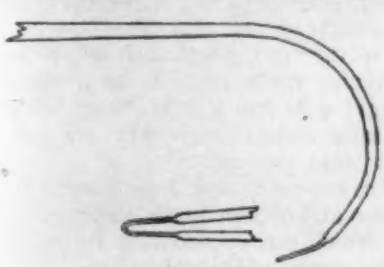

Fig. 1.—Cautery applicator.

is made on top of the tip, and a third incision is made on the middle of the tip and is prolonged backward until it reaches the face of the eustachian tube. Then, from in front, the middle incision is prolonged forward as far as the judgment of the surgeon may indicate. The healing of this wound fixes the scar on the bony tip of the turbinate, and as it contracts in its maturity it draws the anterior lip of the tube forward more or less to open it.

It may be urged that the use of a galvanocautery in such close proximity to the mouth of the tube is dangerous surgery; and, it must be admitted, for its execution it requires a hand that executes exactly what it desires. The operation is difficult as it must necessarily be done through the mouth, the field being visible only in the postnasal mirror; but when properly performed

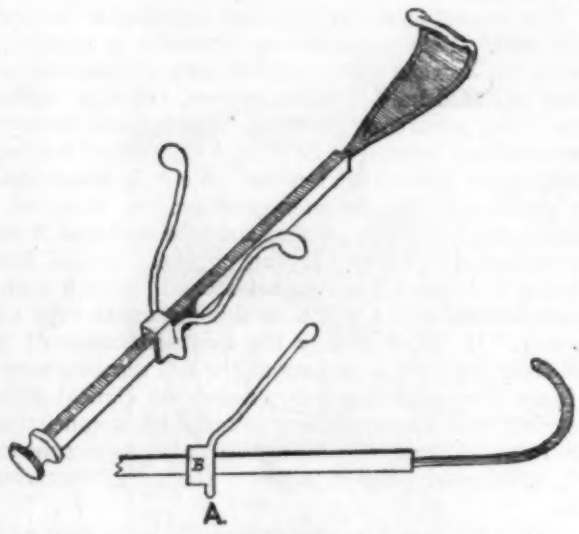

Fig. 2.—Palate retractor.

it has proved to be no more dangerous than any other postnasal surgery. A most important factor is that the nose once operated on should be left absolutely alone. No nasal washes or applications should be made to the wound. The anterior nostril should be closed by a cotton pack which should be left in place for a week.

I have performed this operation many times since 1898. The number reaches well up into the hundreds; the precise figures I do not know. Only once did a middle ear abscess follow. In this case, there was a general grip infection of the nose and throat which supervened three days after the operation. It was of great severity. In all the other cases the middle ear has remained quiescent. They do not show reactions of any kind. Figure 1 illustrates the cautery applicator I use, and figure 2, a palate retractor which locks instantly and loosens instantly, and in my hands has been most satisfactory for the purpose of drawing the palate forward. Figure 3 shows the palate retractor in position with the applicator in place, and the postnasal mirror so placed as to reflect the field of operation. Figure 4 shows the incisions as just described. I recommend for right hand operators that the left side be done first because it is more difficult, as the applicator gets somewhat in its own way and obstructs the vision. Any blood in the field, of course, would further complicate this. The right side is easier of execution. With the cautery tip at a bright red heat such as enables it to work rapidly, the operation may be performed quickly and also, as a rule, without drawing blood.

For one familiar with this surgery, it may be performed in any or all instances once the palate retractor is in place, except when vomiting occurs. The low grade cases have been relieved altogether regardless of long standing infection. The high grade

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* Read before the Section on Laryngology, Otology and Rhinology at the Seventy-Seventh Annual Session of the American Medical Association, Dallas, Texas, April, 1926.

cases have been almost uniformly improved, sometimes greatly. On a few occasions I have performed this operation after a perfect cutting intranasal operation had been performed by some other surgeon, and have obtained the result desired. I have performed normal nasal turbinate tip operations also with benefit. The only reference that I know of to this technic is in a paper by Robert Barclay.[1] He saw it in service in my clinic in 1900 and testifies to its advantages in proper cases.

The second factor in catarrhal deafness is the sphenoid cell. This attracted my attention a number of years ago because many patients with sphenoiditis who were operated on for other reasons, but who suffered also from catarrhal deafness, noted great improvement in their hearing. In 1916 I [2] described the anatomy, which showed that when the cell is pneumatized or prolonged into the pterygoid process it comes in close contact with the eustachian tube and that it may be separated here by only an eggshell film of bone. Figure 5 shows a longitudinal section through such a sphenoid cell with a bristle in the eustachian tube as a marker. It shows clearly the thin separation of the cell from the tube. As long as the cell remains normal I fancy this close association makes no clinical difference, but once sphenoiditis is established, it can irritate the tube. Figure 6 shows the customary sphenoid cell, particularly the separation from the eustachian tube.

Within the past year, because of the large number of such cases, I have thought it worth while to bring this fact before the attention of the Association. I made some roentgenograms with the idea of possibly identifying such a prolongation. I have one picture which I believe shows this fact. Later, however, radiopaque

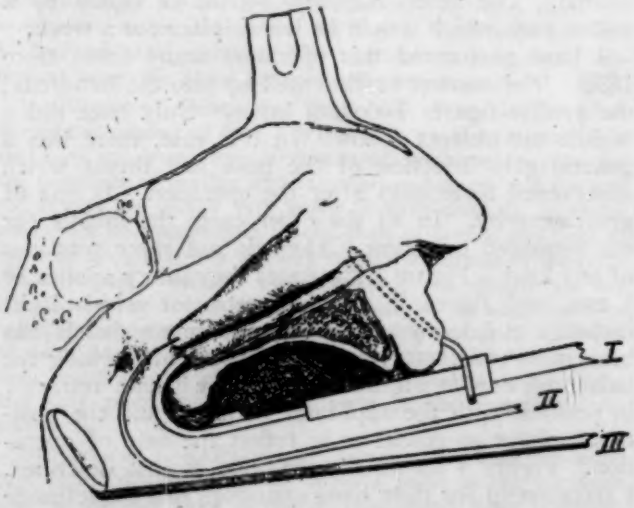

Fig. 3.—Palate hook (*I*) in position, with cautery electrode (*II*) in place and postnasal mirror (*III*) so placed as to reflect field of operation.

iodized oil which may be introduced into the sphenoid cell was put on the market and by using it I have taken a satisfactory roentgenogram showing how far such prolongation extends. With the procedure described by Dr. Arthur W. Proetz, whereby he can introduce solutions into the sphenoidal cell by alternate suction and release, the roentgen-ray demonstration is facilitated. It is well known that many sphenoid cells may be entered by a thin cannula. Such cells could be readily filled with iodized oil. There are other cells, however, in which the ostium is out of reach by any intranasal efforts, and it is in these cases particularly that Dr. Proetz's procedure will be of greatest value. The customary sphenoid cell is well known as limited to the body of the sphenoid; the prolongation of the cell downward into the pterygoid process even as far

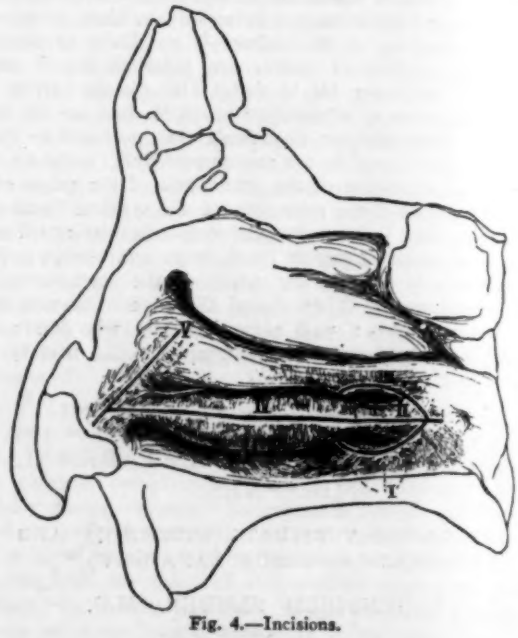

Fig. 4.—Incisions.

as the bifurcation of the plates is not a new anatomic fact and occurs rather more frequently than speculation might lead one to believe. I feel that to put the sphenoid cell definitely into the practice of rhinology as a cause of catarrhal deafness has a definite advantage, and particularly now since with opaque oil the anatomy of the cell may be identified with great accuracy before operation. In past years I have operated in cases of recognized sphenoiditis because of catarrhal deafness, and have sometimes secured very marked improvement. The number of these cases, however, is much smaller than those which I have operated on since the introduction of opaque oil. As this procedure comes into further use, I believe it will be a recognized help. It is also quite possible that disease of very large sphenoid cells has a deleterious influence on the eustachian tube even though they are not prolonged into the pterygoid process.

In a few cases, years ago, I performed the posterior tip destruction and obtained only slight relief. In these cases the sphenoid was opened later for headache or eye lesions with much additional relief. The foregoing facts obviously permit of a differential diagnosis in doubtful cases.

3542 Washington Street.

1. Barclay, Robert: Some Practical Problems in Ear, Nose and Throat Practice, J. Missouri M. A., May and June, 1912.
2. Sluder, Greenfield: Relations of the Sphenoid Sinus to the Eustachian Tube and Their Possible Clinical Importance, Tr. Am. Laryn. A., 1916.

ABSTRACT OF DISCUSSION

DR. GEORGE E. SHAMBAUGH, Chicago: Dr. Sluder has touched on one of the very few intranasal conditions that has any bearing on middle ear disease when he discusses the enlargement of the posterior end of the inferior turbinate. Rhinology has been overworked as the scapegoat for cases of incurable deafness. Even profound obstruction to nasal respiration has apparently nothing to do with middle ear trouble. Alterations in the nasopharynx are potent factors

in producing tubotympanic disease. This is a disease of childhood arising largely because of adenoids. It is also common in cases of malignant growth in the nasopharynx. While we do have cases of tubotympanic catarrh in adults, it is the exceptional case of deafness that is caused by it. Some cases of severe progressive deafness in adults may show alterations in the drum membrane that persist from an exhausted process dating back to childhood. In adults, treating the tube is therefore a logical procedure only for the exceptional case of obstructive deafness. Bulbous enlargement of the posterior end of the inferior turbinal body is most satisfactorily treated by snaring off this posterior end.

DR. ROBERT BARCLAY, St. Louis: To Dr. Sluder belongs the honor of first having demonstrated the superior advantages of this method of disposing of hypertrophy of the posterior lower turbinate as a factor in certain conditions of deafness. Since my adoption of this method, more than twenty-five years ago, in no case have I encountered any considerable hemorrhage or inflammatory reaction. This makes unnecessary plugging the posterior nares with pressure on the anterior lip of the eustachian tube, thus facilitating its pneumatic permeability through the scar traction on its anterior lip. In order to avoid possible hemorrhage, the beginner should bear in mind the high heat absorbing capacity of the tissues and keep his electrode heated to a rather high degree of intensity. After a special practice of nearly forty-three years, I regard this method of Dr. Sluder's as one of the most valuable contributions that have been made to our specialty.

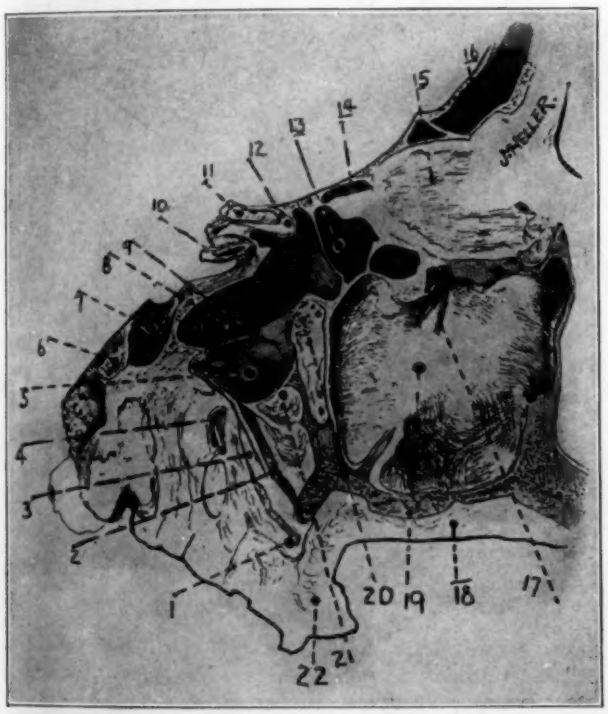

Fig. 5.—Sagittal section between the foramen rotundum and vidian canal, right side, view from without inward: *1*, hamular process; *2*, tensor palati muscle; *3*, levator palati; *4*, eustachian tube with bristle in its lumen; *5*, sphenoidal sinus prolonged downward into pterygoid process to bifurcation of the plates; *6*, clivus of Blumenbach; *7*, groove for carotid artery; *8*, nasal (internal) part of sphenoidal sinus; *9*, vidian canal crossing the sinus; *10*, internal carotid; *11*, optic nerve; *12*, lesser wing of sphenoid; *13*, postethmoidal cell; *14*, superior rectus; 15, orbital fat; *16*, frontal sinus; *17*, bristle passed from maxillary antrum through its outlet into middle meatus of nose; *18*, hard palate; *19*, maxillary antrum (nasal wall seen from without); *20*, nasal ganglion; *21*, internal pterygoid muscle; *22*, soft palate. The optic canal in this specimen is surrounded two thirds of its circumference by sphenoidal sinus for 10 mm. of its length. Close association of eustachian tube to sphenoidal sinus may be observed.

DR. HAROLD M. HAYS, New York: The posterior tip of the inferior turbinate has a good deal to do with continued deafness. With endothermy, we will be able to diminish the edema around the eustachian tube and adhesions in the fossa of Rosenmüller. I feel that a great deal can be done to clear up the eustachian tube and nasopharynx and improve the hearing. During the last eight or ten years I have had cases of tubal catarrh in which the edema was so great that one could not pass an applicator or bougie into the middle ear. Ten years ago I devised a violet ray applicator which is passed through the nose; by applying this ray for five or six minutes one can often pass a sound without any trouble. All men who do this work through the mouth might accomplish

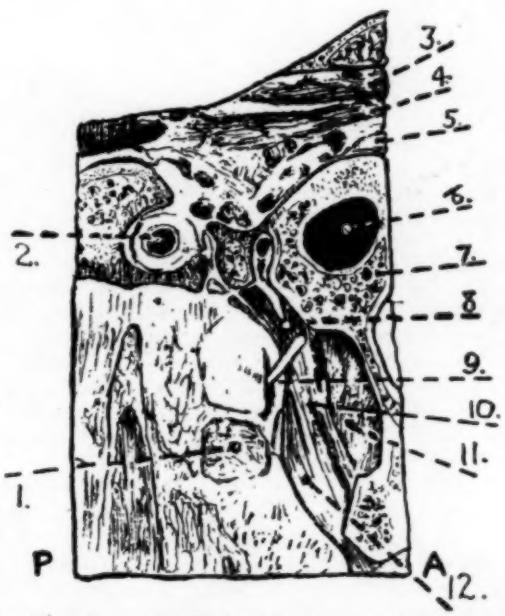

Fig. 6.—Lateral part of sagittal section: *1*, external pterygoid muscle; *2*, internal carotid artery; *3*, oculomotor nerve; *4*, ophthalmic nerve; *5*, cavernous sinus; *6*, lateral limit of sphenoidal sinus; *7*, bony wall of sphenoidal sinus; *8*, tensor palati muscle; *9*, eustachian tube with bristle in its lumen; *10*, tensor palati; *11*, internal pterygoid muscle; *12*, levator palati muscle; *P*, posterior; *A*, anterior.

a great deal more by using the nasopharyngoscope to guide the applicator.

DR. E. LEE MYERS, St. Louis: The postnasal cautery has a definite place in otolaryngology, especially in those cases in which there is clicking in the ear when the head is turned to one side or the other, or in which movements of the head in any position give a sensation referable to the ear. Placing the cautery first into the tissue and then bringing it to a red heat with immediate withdrawal will often help. This can be done several times and cause no pain to the patient. I have recently shown that iodized oil injected into the right sphenoid traveled into the left side showing a communication between the two sphenoids. This corroborates a view of mine that contralateral pain on one side can be remedied by application to the sphenopalatine ganglion of the opposite side.

DR. J. ADDISON LEA, Kansas City, Mo.: Infections involving the sympathetic nervous system sometimes will cause hypertrophies of the turbinate bones to come back, and the only way to control them is to cauterize and treat the infection. There should be a general examination before cauterization.

DR. J. M. ROBISON, Houston, Texas: Systematic examination of the nasopharynx with the nasopharyngoscope has convinced me that the pharyngeal adenoid is more often the cause of interference with the eustachian tube than is the inferior turbinate. By using the nasopharyngoscope in one side of the nose and the cautery in the opposite side, I can perform the operation Dr. Sluder just described with greater accuracy than with posterior rhinoscopy. With the nasopharyngoscope in one nostril and an extension needle in the other, the pharyngeal adenoid may be anesthetized and removed. The eustachian orifice may then be studied. The cautery can be introduced while cold, and under the guidance

of the eye the posterior tip of the turbinate bones may be cauterized, or the fossa of Rosenmüller may be cauterized to produce scar tissue which will draw the thin atrophic posterior lip of the eustachian tube away from the tubal orifice and allow ventilation and drainage of the tube. Most of the patients whom I have treated in this manner have been between 30 and 40 years of age, and they show a thin, ribbon-like posterior lip of the eustachian tube which is evidently the result of pressure on the tubal orifice during childhood and which has been relieved by the physiologic atrophy of the adenoid. However, many of these have retained a large adenoid all their lives. In these cases, removal of the adenoid and cauterization posterior to the orifice of the eustachian tube open up the tubal orifice and produces ventilation and good results.

DR. SIDNEY ISRAEL, Houston, Texas: Dr. Sluder mentions "catarrhal deafness." I do not understand this term; but if it is meant to imply the deafness following acute otitis media, and repeated attacks of inflammation with exudate, with or without involvement of the eustachian tube, then I cannot see, with this disease condition present, wherein the removal of the posterior tip, or cauterization, in this locality would influence in the least the deafness existing. Middle ear deafness, resulting from repeated attacks of inflammation is generally associated with a perfectly open eustachian tube. Further, when strictures or a narrowing of the eustachian tubes are present, they most likely take place at the isthmus of the tube and not at the pharyngeal orifice. It would be of value if Dr. Sluder would estimate the amount of hearing present before this cauterization, and then repeat the examination over a period of a year or more, utilizing the audiometer.

DR. GREENFIELD SLUDER, St. Louis: Dr. Lea spoke of recurrent hypertrophy. In the hundreds of cases in which I have operated in the course of twenty-eight years I do not think that hypertrophy was returned five times. The tip of the turbinate is covered by a smooth, tight scar. I have never seen hypertrophy redevelop with its primary exuberance. Dr. Robison seemed to think that trouble with the posterior tip of the turbinate was negligible compared with that arising from the adenoid. I believe that is obvious. There is a prodigious amount of trouble with adenoids. In 1867, Dr. Mayer announced that the pharyngeal tonsil was a clinical as well as an anatomic tissue. Dr. Robison also expressed the feeling that the same result could be obtained, and more easily, by the use of the pharyngoscope in one nostril and the cautery electrode in the other. I have thought of that in times gone by, but I have never been able to couple up so close as to get the cautery in one hand and the pharyngoscope in the other—I did not have room for it. If the electrode and the pharyngoscope can be perfected so that they can be used in that way, then this operation can be done quite as well and with very much less mechanical dexterity than is required for the postnasal fish-hook cautery. However, having begun this procedure in 1898, I antedate the development of the pharyngoscope. Dr. Israel raised the question, What is catarrhal deafness? I am too astute to try to answer that. Dr. Shambaugh touched on that. I stated in the first line of this text that patients with catarrhal deafness might be helped by relieving the obstruction to the eustachian tube. Dr. Israel spoke of tests of hearing. How do we know these patients are improved? A man who could hear only the best actors in the front row, and who later for twenty years says he hears in the fifteenth row, has improved in his hearing.

Laboratory Not Final in Reaching Diagnosis.—Although it is established that, in the majority of instances, illness results from the invasion of the body by micro-organisms, vegetable or animal, or by poisons of inorganic origin, and although such immense help has been got from the culture and study of such organisms and of their effects on lower animals, and by the experimental study of the phenomena of immunity, we cannot learn in the laboratory all that we need to know about disease.—Garrod, Archibald: *Lancet* **2**:736 (Oct. 9) 1926.

ELECTRIC CAUTERY VERSUS STURMDORF OPERATION

IN THE TREATMENT OF CHRONIC ENDOCERVICITIS*

HARVEY B. MATTHEWS, M.D.
BROOKLYN

[EDITORIAL NOTE.—This paper, together with the papers of Drs. Culbertson, Gellhorn, and Corbus and O'Conor, which follow it, conclude the symposium on diseases of the cervix. In our last issue we published the papers of Drs. Miller, Ward and Lynch.]

For more than sixty years, gynecologists all over the world have been employing sundry forms of local treatment and devising all sorts of operations for the cure of chronic endocervicitis, but as yet no method has been discovered that is universally satisfactory. However, during the last few years, a more rational treatment of this common malady has slowly been evolved from a better understanding of the anatomy, physiology, pathology and bacteriology of the uterus and cervix and those structures in juxtaposition that are reached by the lymphatic drainage therefrom. We

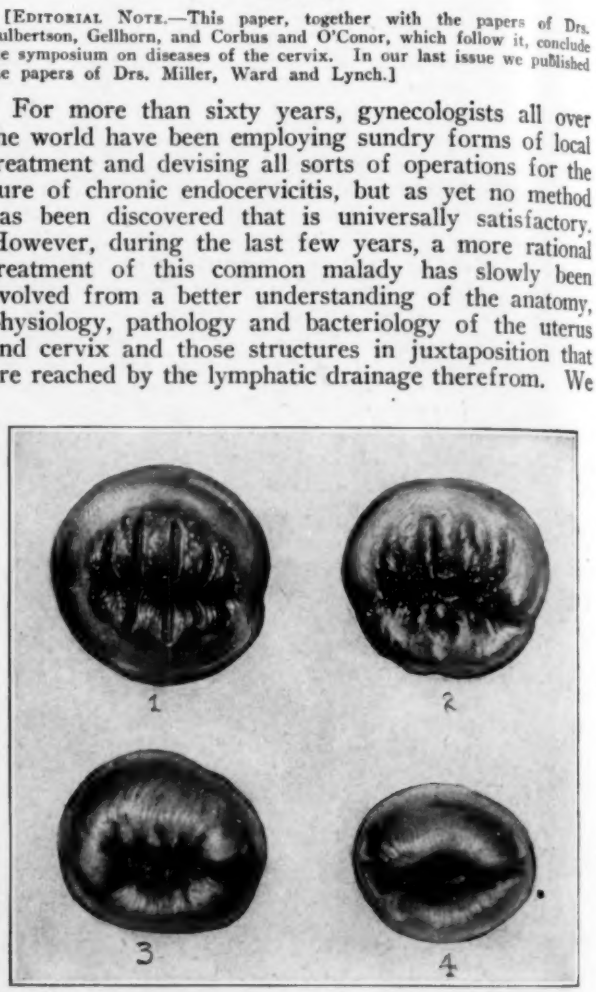

Fig. 1.—Method of "striping" and process of healing. Cervix exposed and held fast by ordinary bivalve speculum. Single tenaculum helps mobilize cervix, but usually is not necessary. Cautery heated to white heat before making "stripes" or puncturing cysts.

are now perfectly sure that the troublesome leukorrhea, in almost all cases, is cervical in origin and is the result of infection. When there is no infection there is no alarming leukorrheal discharge.

In both structure and function, the cervical mucosa differs widely from the endometrium of the corpus uteri. The cervical canal, lined with its mucosa, acts simply as a passive communicating canal between the vagina, which is always the habitat of many and various bacteria, and the uterine cavity; while the corporeal endometrium is constantly passing through the active changes that are essential to menstruation and deciduation. The cervical mucosa, composed largely of high columnar epithelium and deep penetrating racemose glands, evinces a marked susceptibility to infection, while the corporeal endometrium is usually immune

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* Read before the Section on Obstetrics, Gynecology and Abdominal Surgery at the Seventy-Seventh Annual Session of the American Medical Association, Dallas, Texas, April, 1926.

against it. Therefore, endocervicitis should be a very common disease; and endometritis, as a pathologic entity, should rarely be encountered.

The mucosa of the cervix when chronically infected is swollen and often everted, while the mucosa of the portio about the external os presents a circumscribed area of glandular proliferation. The columnar epithelium covering the mucosa of the cervical canal, under constant stimulation of infection, actually pushes itself out on to the vaginal aspect of the cervical rim, replacing the stratified epithelium which is normally present in this situation, thus producing the so-called erosion. This erosion, or "red area," about the external os, therefore, is not an ulceration in any sense of the word, but is a new formation of gland tissue and may, under certain conditions, become malignant. The continued congestion incident to such a condition produces a hypersecretion of mucus from the gland structure and ultimately a hyperplasia and hypertrophy of the cervical connective tissue. Sooner or later, the crypts of these glands become occluded, with subsequent cyst formation—the so-called nabothian cysts so familiar in this region of the cervix. This cystic condition, as might naturally be expected, increases the bulk of the already hypertrophied cervix and thereby interferes with its circulation and muscular contraction. It is this hyperplasia that causes the premenstrual and postmenstrual metrorrhagia so frequently seen in multiple cystic formation of the cervix.

Microscopically, we may find all the evidence of a chronic inflammation, or in many instances there is very little inflammatory change in the stroma, and except for a preponderance of gland tissue, the section

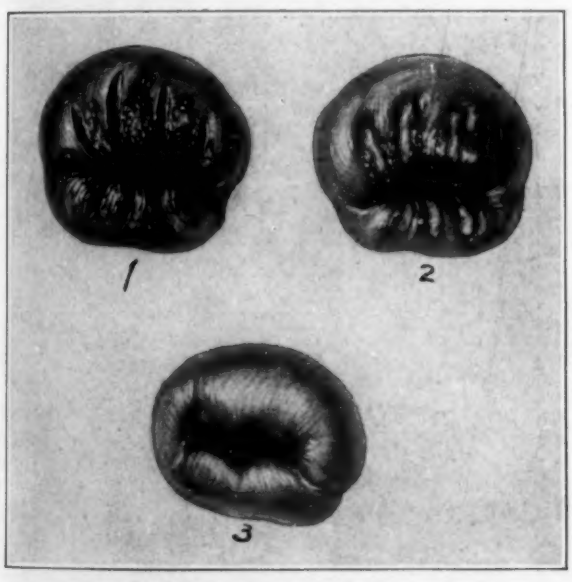

Fig. 2.—Same as figure 1 except that deeper incisions or "stripes" are shown. Some form of anesthesia necessary. Much more extensive than in figure 1.

appears almost as normal cervical tissue. Section of a nabothian follicle may show as a large, clear space lined with columnar epithelium and filled with mucus. Surrounding this there may be the signs of an active chronic inflammation, as shown by round-cell infiltration, edema, congestion or dilated lymph spaces.

The clinical course of chronic endocervicitis is slow and insidious and shows little or no tendency toward a spontaneous cure. The symptoms are variable. In the milder cases in which the infection is not sufficiently virulent to be progressive, cervical leukorrhea of a mucoid character, which may be scanty or profuse, is the only symptom complained of—simple to describe but often extremely invidious to the patient and well nigh invincible to the physician. When the infection extends to the deeper structures of the cervix and the uterus, we may have an ascending lymphangitis, which, we believe, may and usually does extend into the parametria, thence through the lymphatics to the fallo-

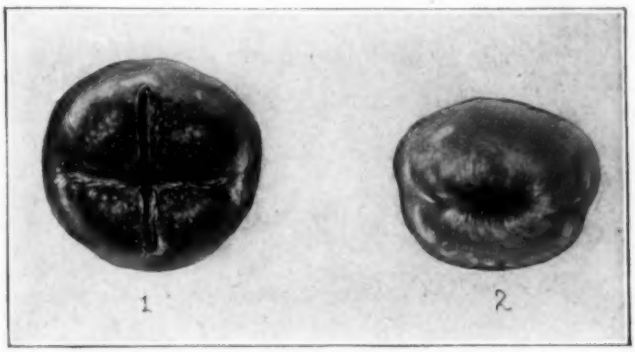

Fig. 3.—"Crucial incision" method, used when there are no lacerations. Badly infected nulliparous cervix. Cysts, if present, should be punctured (compare figure 4).

pian tube and ovary, producing a perisalpingitis or endosalpingitis, ovaritis, and even a low grade peritonitis. The symptoms produced are those of a mild chronic pelvic inflammation accompanied by a profuse mucoid or mucopurulent cervical discharge. Under such circumstances, the subinvolution, which the circulatory and lymphatic stasis cause, renders these structures more susceptible to new infection and less resistant to the old infection.

Chronic endocervicitis is always attended by some degree of posterior cellulitis in the uterosacral ligaments, which explains the premenstrual and comenstrual backache and dyspareunia so frequently complained of. The most prominent symptom in most cases is leukorrhea. This discharge is intermenstrual, mucoid in character, usually profuse and viscid, translucent or opaque or curdy, or it may be purulent when inflammation is suppurative. It is always more abundant just before and after the menstrual period. The patient often suffers from circulatory stasis and the intermuscular lymphangitis which impairs the contractile power of the uterine muscle, giving rise to a heavy, tender uterus. The lumbosacral pain is due to traction of the enlarged uterus and cervix on the thickened, tender, uterosacral ligaments. Many patients complain of no symptoms, except leukorrhea, although examination will always reveal the erosion, eversion and cystic hyperplasia, showing evidence of chronic infection.

The prognosis in chronic endocervicitis is doubtful. When the infection is slight and the coincident inflammation mild and treatment is instituted early, complete recovery may take place. On the other hand, when the infection is virulent and the inflammatory changes are marked, many possibilities loom in the field. The cervical glands may harbor infecting organisms for years. These glands are situated in tissue that is more or less richly supplied with lymphatic drainage. These lymphatic channels pour their contents into lymph channels which communicate with the lymphatic chains in the parametrial tissue and in the uterosacral liga-

ments. Hence, the associated lesions, as metritis, parametritis and uterosacral cellulitis, are progressive; and not until the focal infection is cured can these associated lesions, which produce the symptoms of leukorrhea, metrorrhagia and lumbosacral backache, be improved. Furthermore, long continued cervical inflammation may be considered a prodrome of cervical cancer, for it is but a step from the extreme cell proliferation with an orderly arrangement that occurs in

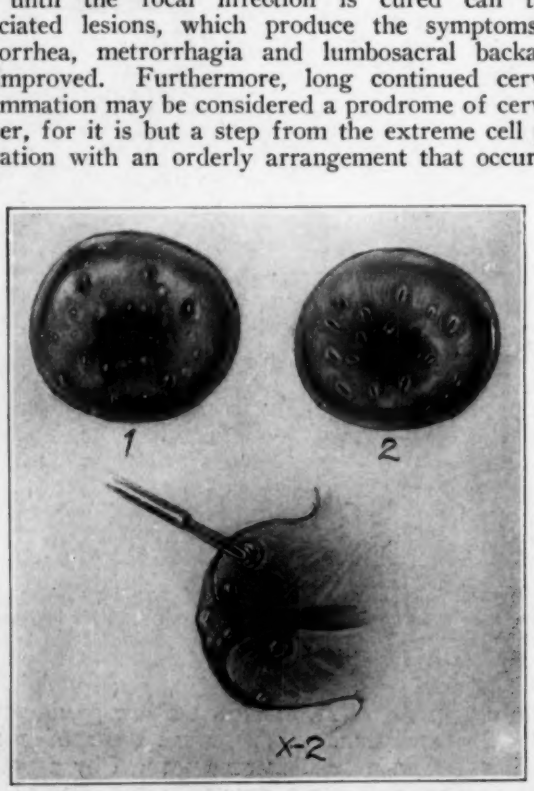

Fig. 4.—Method of pucturing cysts, used alone or in conjunction with "stripings" as in figures 1, 2, or 3. Size of cautery tip (X 2) should be noted.

marked hyperplastic cystic endocervicitis to the disorderly arrangement of embryonal cells found in cancer.

In the treatment of infected cervices, we have come to feel that, unless begun early, within a few weeks after the infection is planted, local applications are of little or no value. Furthermore, when the infection continues unchecked for years and finally operative measures are undertaken for the relief of symptoms, we again realize that operation does not offer all that could be desired. This state of affairs therefore calls for a method or a means of treatment that is, first, prophylactic or a "between childbirth" plan of management and, secondly, a procedure that may under certain conditions be substituted for the more radical operative methods. The electric cautery seems at present to fulfil the requirements of such a method.

The more or less superficially infected, eroded cervix or the recently lacerated, everted cervix so commonly seen from ten to twenty weeks post partum can be healed and "rolled in" by the judicious use of the small nasal type cautery within from four to eight weeks. The small, spatula-shaped tip is employed, and three or four or five or more linear incisions (stripes) are made over the eroded or everted areas, spaced from 0.5 to 1 cm. apart and from 3 to 6 mm. deep, and extending well into the canal (fig. 1). A second "striping," if necessary and in early cases it is usually not necessary, should be done in two weeks. For the more severely infected and eroded or the more widely everted cases of longer standing, several "stripings" at intervals of about two weeks may be necessary for the entire destruction of the infected area and the complete rolling in of the eversion.

Better results are often obtained by cauterizing only one cervical lip, with its corresponding portion of the canal, at a time, particularly if there exist rather deep bilateral lacerations with considerable eversion and ectropion. The hypertrophied infected mucous membrane of the cervical canal must be included in this procedure; otherwise, the leukorrheal discharge will not be relieved. On the other hand, care must be exercised lest all the mucous membrane near the external os be destroyed. Nabothian cysts, over the outer rim of the cervical lips, that have not been punctured thus far by the cautery, should be pierced and their contents evacuated (fig. 4). The procedure is painless, except occasionally, and can therefore be carried out in the office. Should the pain become disturbing, local anesthesia may be used, although I have never found it necessary. The cauterization finished, 4 per cent mercurochrome-220 soluble is swabbed over the cervix and throughout the vagina. Naturally, the leukorrheal discharge is more profuse for a week or ten days after the cauterization. No vaginal douche need be taken, but no harm can be done if douching is preferred in consequence of the excess leukorrhea. Healing and epithelization is complete in about six or eight weeks, after which there is no leukorrheal discharge. Likewise, all other pelvic symptoms are improved or entirely relieved, if caused by the infected cervix.

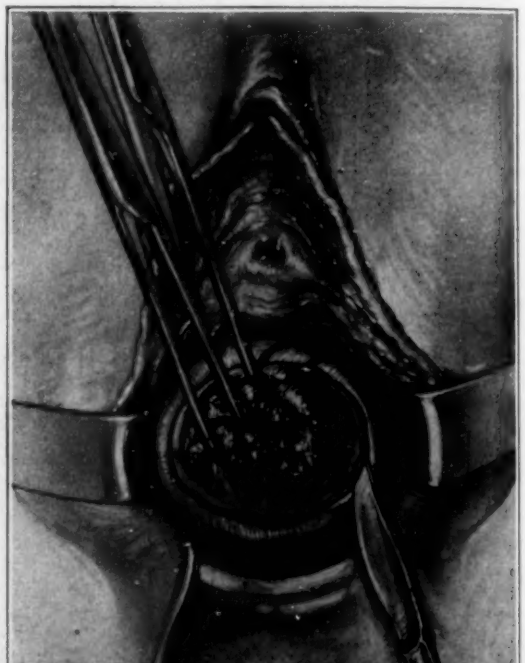

Fig. 5.—Outline of incision just external to outer limits of erosion.

The next type of cauterization, to be carried out when the infection is deeper and there is definite hyperplasia with cyst formation (nabothian cysts), consists in using essentially the same technic except that the linear incisions are deeper, a little farther apart and extend a greater distance, from 2 to 3 cm., up the cervical canal. This type of cauterization, furthermore,

is usually carried out in conjunction with other necessary operative procedures, and hence anesthesia—local, regional or general—is required. A heavier, larger cautery tip, such as is commonly used for appendectomy, is recommended. The parametrial reaction in these more extensive cauterizations, even when done alone without other pelvic operations, is severe enough to call for several days' rest in bed. The cervical canal with its congested hypertrophied infected mucous membrane, which extends from the external to the internal os, must be "cut through" with the hot cautery, if the infection is to be destroyed (fig. 2). Cysts must be punctured and their contents rendered innocuous and, if possible, the remaining cavities sterilized by heat. The endocervical mucosa should not be completely destroyed. The round pencil-like cautery, which plugs the cervical canal from external to internal os, is mentioned only to be condemned. It completely destroys the endocervical mucous membrane, and stricture or stenosis is sure to follow. The thin, ringlike tip of the usual operating room cautery does not permit complete destruction of the mucous membrane of the canal if the "striping" method of cauterization is carried out carefully, for there are left small strips or elongated islands of mucous membrane covered by its columnar epithelium. Epithelization must restore the caliber of the cervical canal in order that stricture or stenosis will not result.

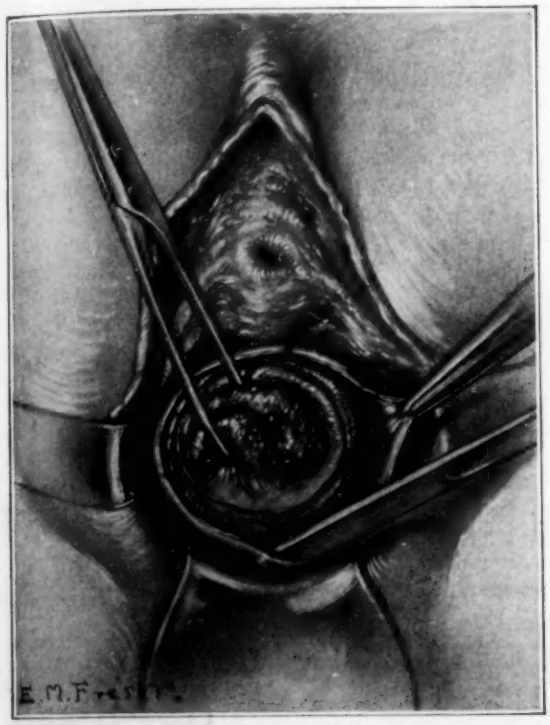

Fig. 6.—Separating mucous membrane, along line of cleavage. No bleeding. Sufficient flap must be separated to cover over completely the denuded "cone" area.

The dangers and inconveniences of stenosis of the cervical canal in the menstruating woman need only to be mentioned to cause a disagreeable thrill to pass through those of us who have had such accidents occur. I have seen two such cases, following rather deep cauterization, neither of which proved serious; for by inserting closed uterine dressing forceps through the stenosed external os, sufficient drainage was obtained to empty the uterus of its retained menstrual blood. Before the next menstrual period, epithelization of the traumatized cervical canal had taken place and no further trouble was encountered. Again let me warn against complete destruction of the endocervical mucous membrane. If after the slough has occurred, in four to six weeks, and the resultant granulations do not permit a visible or easily findable external os, immediate dilation of the cervical canal is in order. As in the less extensive cauterizations, a more profuse leukorrhea, perhaps slightly blood tinged, is present for a few weeks and then gradually lessens as healing and epithelization take place, until within eight or twelve weeks, when there should be little or no discharge. If the foci of infection have not all been completely removed, of course, there will still be more or less leukorrheal discharge. In general, where there is glandular tissue (epithelium) and infection there is excessive secretion, and the cervical mucosa with its glands is no exception. Furthermore, the first few menstrual periods, after these deeper cauterizations, are apt to be a little in excess of the normal; but later, when normality is established within the cervix and uterus, menstruation is often more normal than before the cauterization.

The third type of cauterization is used when there are no lacerations or eversion visible as the cervix is exposed, but when there is present frank infection with hyperplasia, with or without cyst formation. A crucial incision is made with the small nasal type cautery, if no anesthesia is used or with the larger knife cautery when anesthesia is used, extending well up the canal and outward over the cervical rim. The incisions are from 3 to 6 mm. deep and from 2 to

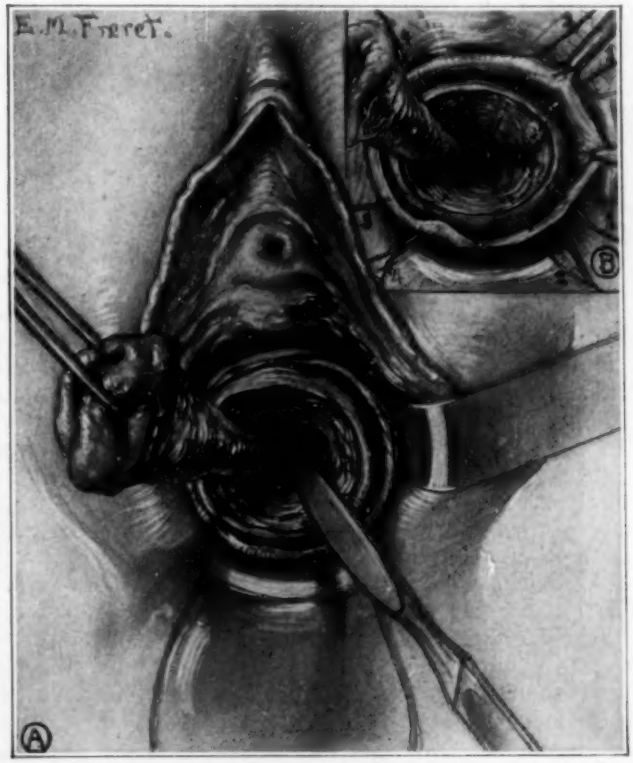

Fig. 7.—*A*, "cone excision" of infected area completed but cervical canal not opened; cone used as tractor to facilitate placing of sutures as shown in *B*. *B*, suture 1 begins at 2:30, emerges at 3:30; suture 2 begins at 1:30, emerges at 4:30. Suture 2 should not enter, but must approach, the cervical canal.

3 mm. in width (fig. 3). The rolling in process is completed in from six to twelve weeks, after which the cervix becomes much smaller and the discharge ceases entirely or is very markedly decreased. When it is deemed unwise to use the crucial incisions, simple puncture of the cysts with evacuation and sterilization of the cyst cavities (fig. 4), with or without the "striping operation" as shown in figures 1 and 2, may be carried out.

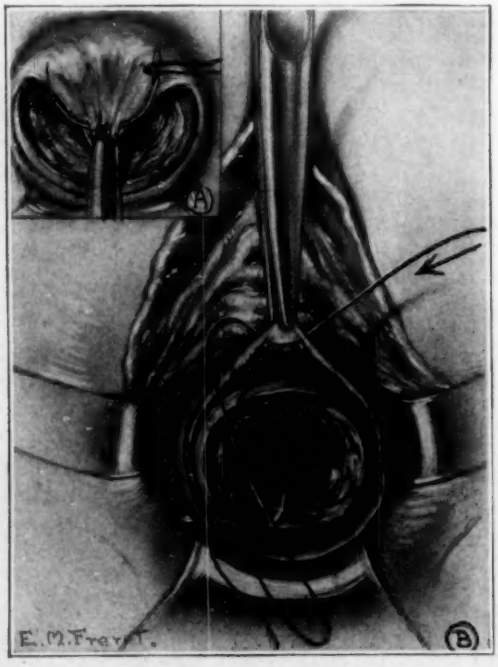

Fig. 8.—*A*, estimating extent of flap needed and method of placing first stitch of the double inverting stitch as suggested by Sturmdorf. *B*, technic of placing first half of double inverting stitch; needle well up the cervical canal; good bite of cervical tissue.

The fourth type of cauterization is the very extensive and deep operation which has for its object the complete destruction of the infected cervical mucosa with its subjacent muscle and fibrous tissue from external to internal os, as well as the infected, eroded or everted area about the external os, leaving a conelike cavity extending to the internal os. The "cone" amputation of the cervix with the cautery for early cancer, leaving a craterous cavity, should also be mentioned in this connection. The likelihood of hemorrhage, following these extensive burns, must be kept constantly in mind, particularly when the slough comes away in from four to six weeks after cauterization. These very extensive operations necessitate a much thicker, heavier cautery tip than those recommended above. The flat side of the cautery tip, instead of the cutting edge, is best employed for "coning out" in these cases. Naturally, anesthesia is required. Furthermore, unless the patient is well past the menopause, obliteration of the uterine canal with complete destruction of the corporeal endometrium must be accomplished. Failure to observe these suggestions is almost sure to result in stenosis at or below the internal os, with subsequent hematometra. These extensive operations need not concern us further in this study, but are mentioned merely in contrast to the less extensive and much simpler cauterizations.

I now pass on to the consideration of an operative procedure—the Sturmdorf enucleation operation—that is, I believe, the best operative method extant for the cure of chronic endocervicitis. There may be those who prefer to use one of these methods (cauterization or Sturmdorf operation) to the exclusion of the other; but I feel that there is a place for both. Certainly, cauterization is indicated in all early infected eroded or everted cases and in certain well selected cases of longer duration, even with some hyperplasia and cystic formation, while the Sturmdorf enucleation operation should be done only on the more extensive deeper infections with hyperplasia and cystic changes that may not be eradicated, with safety, by the cautery.

The Sturmdorf technic, with certain minor modifications, is as follows: With the patient anesthetized and placed in the lithotomy position and the vulva, vagina and cervix prepared for operation, the anterior and posterior lips of the cervix, within the margin of the erosion, are grasped with bullet forceps and the cervix pulled down. An incision is then made through the mucous membrane of the portio, encircling the outer limits of the eroded area (fig. 5). The portical mucosa is pushed back for a distance of 2 or 3 cm. or more, if necessary, to acquire sufficient flap of mucous membrane to cover completely the excised area of cervical tissue (fig. 6). Then with a sharp-pointed bistoury or, better, a small Bard-Parker knife, while traction is being made on the cervix by the Jacob forceps previously placed, the entire glandular area surrounding the cervical canal is "coned out," the cone incision extending up to or just below the internal os (fig. 7 *A*). Great care should be exercised in preserving all the muscle tissue and still remove all the infected area. If too much cervical (muscle) tissue is removed, the operation becomes an amputation (high or low), which, for obvious reasons, should be avoided. If, on the other hand, not enough tissue is removed and the infected glands are left behind, the purpose of the whole operation is defeated. Before one removes the conical plug, which is now attached only by a small rim of cervical

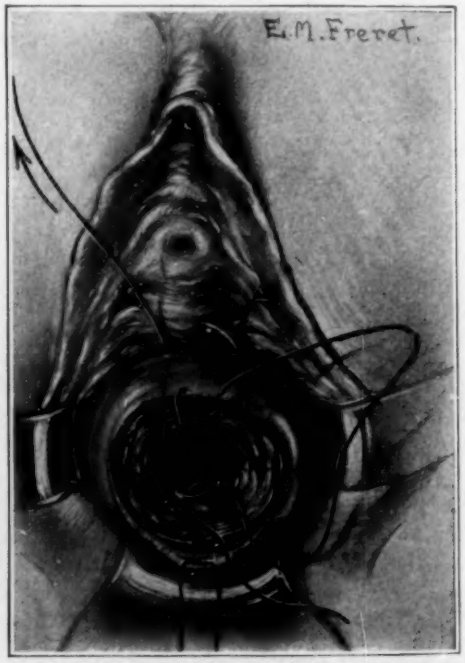

Fig. 9.—Second half of double inverting stitch. Most important to have sufficient mucous membrane to cover all denuded area.

tissue and its cervical mucosa, four sutures (two on each side of the attached cone) of no. 2 chromic catgut on a cervix needle are placed through the previously liberated flap of vaginal mucous membrane to either side of the partially excised cone. The outermost suture is placed from 0.5 to 2 cm. from the cut edge of mucous membrane, beginning at the point corresponding to 2:30 on the clock dial, including a good bite of cervical muscle on the anterior aspect of the hollowed-out cervix, thence in a similar manner on the posterior aspect of the coned-out cervix, taking the same sized bite and emerging at 3:30 from 0.5 to 2 cm. from the cut edge of mucous membrane (fig. 7 *B*, suture 1). Similarly, the innermost suture is placed through the body of the excavated cervix, beginning at 1:30 from 2 to 2.5 cm. from the cut edge of the mucous membrane, on the anterior aspect, emerging at, but not into, the canal; thence in a similar manner, taking as nearly as possible the same sized bite, through the posterior portion of the body of the cervix, emerging at 4:30 (fig. 7 *B*, suture 2). When these sutures are drawn taut, the operative field is brought well down toward the vulva. The cervical canal, at the uppermost limit of the cone, is now opened and a single tenaculum is introduced into the canal for the purpose of further bringing the cervical stump down nearer the vulva. When this is done, the remainder of the cone is excised.

Fig. 10.—Longitudinal section of the cervix and uterus to show mechanism of inversion of cervical reflexion of vaginal mucous membrane: *A*, stitch placed and drawn up; *B*, more traction on suture, with partial inversion of mucous membrane; *C*, more traction, with complete inversion of mucous membrane.

The vaginal flap, originally liberated at the beginning of the operation, is now inverted into the hollowed-out shell of the cervix by the double inverting stitch of Sturmdorf (fig. 8). This maneuver brings the vaginal mucosa into contact with the cervical mucosa and thus completely covers all denuded areas and, furthermore, substitutes healthy vaginal mucosa for infected cervical mucosa (figs. 9 and 10). This stitch is chromic catgut no. 2 (twenty or forty day) or silkworm-gut and, when tied, not only coapts the vaginal mucosa to the cervical mucosa, but controls bleeding in the tissues through which it passes. This suture, if silkworm-gut, is left in situ for three or four weeks, or until the patient returns for her follow-up examination after discharge from the hospital. The chromic gut sutures to either side, which have thus acted as traction sutures, are now tied, bringing the gaping outer angles of the "coned incision" together and completely controlling hemorrhage (fig. 11). With all six sutures tied, the operation is completed (fig. 12). A small strip of iodoform gauze drain is placed against the cervical stump, which is removed in twenty-four hours.

The follow-up results of this study may be seen in the accompanying tables.

TABLE 1.—*Results in Two Hundred and Twenty-Six Cauterizations (Office Cases* and No Anesthesia)*

	Number	Per Cent
Cured	180	80
Improved	46	20
Unimproved	0	0

* All these cases were either recent infections (from three months to two years) or were not so extensive as to require operation. There were no other pelvic conditions requiring operation. Many pregnancies occurred and labor terminated without complications attributable to cauterization.

TABLE 2.—*Results in Fifty-Five Cauterizations* (Hospitalization and Anesthesia)*

	Number	Per Cent
Cured	28	51.0
Improved	18	32.7
Unimproved	9	16.3

* Other operations were performed in conjunction with cauterization for various pelvic lesions. Six pregnancies occurred, and all labors terminated without complications.

TABLE 3.—*Results in Seventy Total Excisions (Sturmdorf)**

	Number	Per Cent
Cured	49	70.0
Improved	16	22.8
Unimproved	5	7.2

* Pregnancy occurred in eight cases, five of which progressed to full term. Three patients had normal labor; one had a long, tedious labor with low forceps; one had cesarean section for disproportion; one patient aborted at three months. In ninety-five cases previously reported, there occurred twenty pregnancies with four abortions, and three cases of cervical dystocia in which delivery finally occurred without accident, thus giving fourteen normal labors.

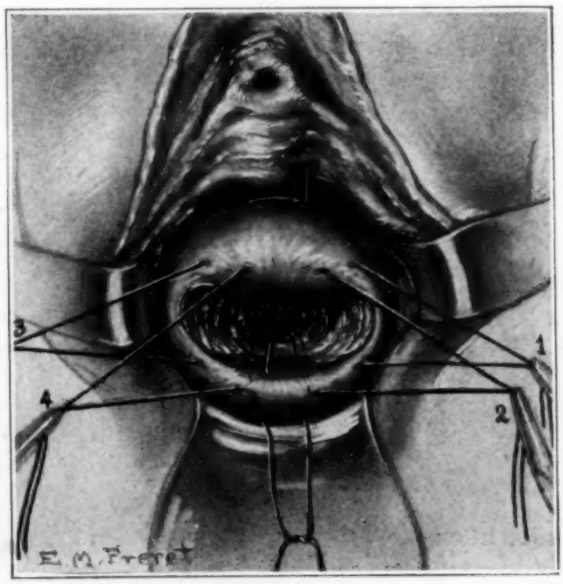

Fig. 11.—Anterior and posterior double inverting stitch tied; lateral sutures pulled taut just previous to tying: 1, 2 and 3, 4.

CONCLUSIONS

In comparing the results of the cautery treatment with the Sturmdorf enucleation operation for the cure of chronic endocervicitis it seems fair to state that:

1. Cauterization is, for the majority of cases, an office procedure, whereas the Sturmdorf operation

requires hospitalization or its equivalent with anesthesia —local, regional or general.

2. Cauterization is primarily a prophylactic measure which, if properly employed early in the course of chronic endocervicitis, will obviate the necessity of operation later when the infection becomes more widely and deeply disseminated.

3. Cauterization is more successful in those cases in which the infection is superficial and the lacerations not extensive. There is a type of hyperplastic cystic endocervicitis encountered during the childbearing age (infection of long standing) in which cauterization is contraindicated because of the resulting scar formation with possible stricture or stenosis of the cervical canal. The Sturmdorf operation will remove the infected cervical mucosa with its glands, and is therefore preferable.

4. Cauterization is most successful in destroying the infected cervical mucosa after the menopause or preceding supracervical hysterectomy when further menstruation is impossible.

5. The Sturmdorf operation is primarily indicated in those cases not suitable for cauterization; i. e., infection of long standing, deeply disseminated, with cystic changes encountered during menstrual life.

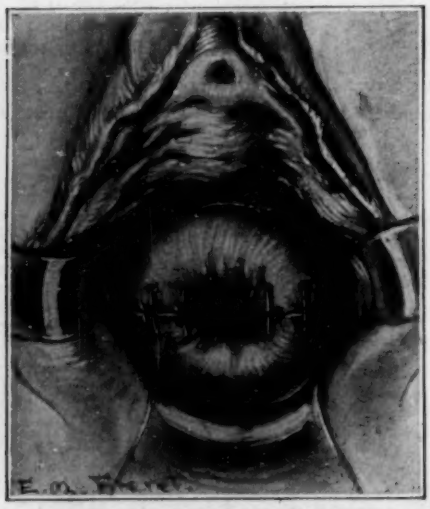

Fig. 12.—All sutures tied; operation complete; only six sutures.

6. The Sturmdorf excision is distinctly an operation requiring some form of anesthesia and probably hospitalization, whereas the cautery operation is essentially an office procedure. Therefore, I do not believe that one method supplants the other, but rather that both are good methods; in fact, the very best we know of today.

7. Pregnancy and labor are not interfered with in any way by the superficial and moderately deep cauterizations of the cervix. The deep and more extensive cauterizations under anesthesia, naturally, are more apt to cause complications during pregnancy and labor, although six of fifty-five cauterized patients under anesthesia had perfectly normal labors.

8. Pregnancy and labor, after the Sturmdorf operation, are not any more interfered with than by trachelorrhaphy. Out of a total of twenty-eight pregnancies after the Sturmdorf "cone" operation, there were seventeen normal labors, three had moderate cervical dystocia but finally delivered normally, one had low forceps, one had cesarean section the indication for which was not the cervix, and six patients aborted, the cause not found in the cervix.

9. A keener appreciation of the pathology of chronic endocervicitis, and a wiser selection and individualization of cases coupled with greater skill in the art of cauterization or in the proper performance of the Sturmdorf enucleation operation, will determine the degree of success or failure in treatment.

EROSION OF THE CERVIX UTERI

WITH OBSERVATIONS ON ITS CAUSES, DEVELOPMENT AND RESULTS *

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CHICAGO

It may be stated in general that the descriptions in textbooks of erosion of the cervix are, for the most part, satisfactory. The histologic structure of this lesion has been understood for many years, and an attempt to describe it here will not be undertaken further than that presented in the accompanying illustrations. The descriptions referred to, however, often pass over the condition lightly and appear to disregard as unimportant, because they are so commonly seen, the varied cellular developments that characterize erosion

Fig. 1.—Simple erosion: extensive loss of flat epithelium on the surface of the portio, or its degeneration, with the appearance of cylindric cells and the development of early gland tubules.

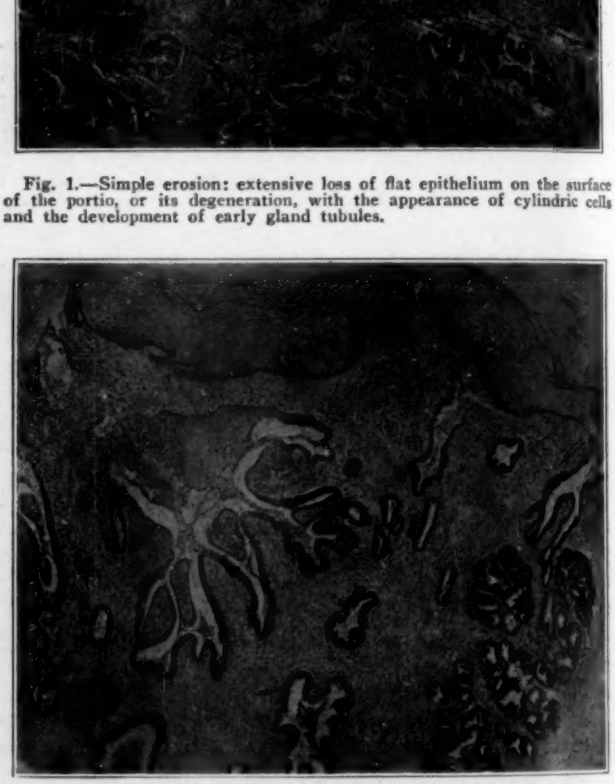

Fig. 4.—Flat epithelium in multiple layers has reappeared on the surface, covering the deeply lying glands, plugging their mouths and causing their distention. Atypical proliferation is seen in one of these glands—a typical follicular erosion representing so-called false healing.

* Read before the Section on Obstetrics, Gynecology and Abdominal Surgery at the Seventy-Seventh Annual Session of the American Medical Association, Dallas, Texas, April, 1926.

* Owing to lack of space, this article is abbreviated in THE JOURNAL by the omission of several illustrations. The complete article appears in the Transactions of the Section and in the author's reprints.

in its several phases. On the other hand, erosion has been placed in the category of "precancerous" lesions by certain writers, without their stating in what way or under what circumstances these changes take place.

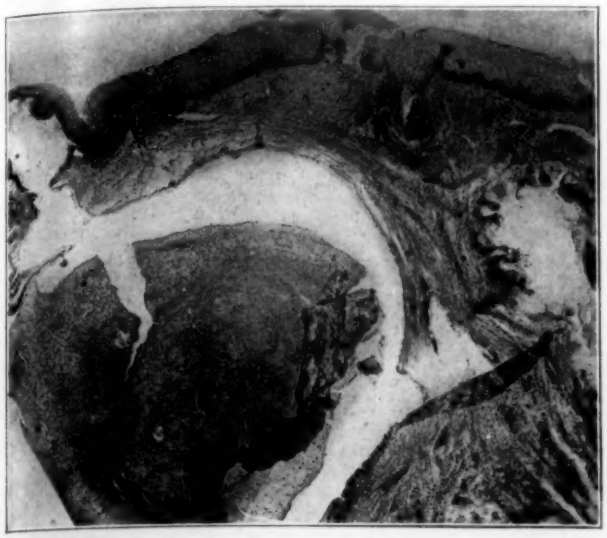

Fig. 6.—Follicular erosion, also showing false healing, with glandular distention and round cell infiltration, most marked at the breaks in the superficial covering.

Some erosions are simple and plainly enough lesions benign in nature; others show an extensive proliferation of cells, the development and arrangement of which clearly place the condition at the line bordering on malignant disease, or show that malignant disease is definite. Where shall the physician in general prac-

Fig. 7.—Follicular erosion representing so-called true healing, with evidence of infection below the surface.

tice, who oftenest sees these lesions first, draw the line in his estimation of their importance?

Stone applied the term "precancerous" to those changes which show a variable quantity and quality of the other histologic criteria of cancer. Morphologic alterations in epithelial growth often differ only a little from the regenerative activity of benign lesions. This is particularly true of the papillary form of erosion; but in the follicular erosion atypical healing produces changes often differentiated with difficulty from the alterations typifying malignant disease. It would seem that for each type of fully developed carcinoma, as it appears in the cervix, there is a corresponding type of benign or intermediary change. But these atypical developments emphasized by Stone are much the same as those described by earlier writers, notably Winter and Ruge, by whom the term "precancerous" is not used. They assume, apparently, that the relation between erosion and carcinoma is evident.

In his careful and valuable study of chronic leukorrhea, Curtis sets down erosion as one of the patho-

Fig. 9.—False healing with extensive round cell infiltration extending deeply into the tissue. In this case the entire cervical wall was thickened and hypertrophic.

logic features. That erosion is the direct result of a more or less continuing excessive discharge is undoubted. One practically never sees an erosion in the absence of a vaginal discharge, and its presence is

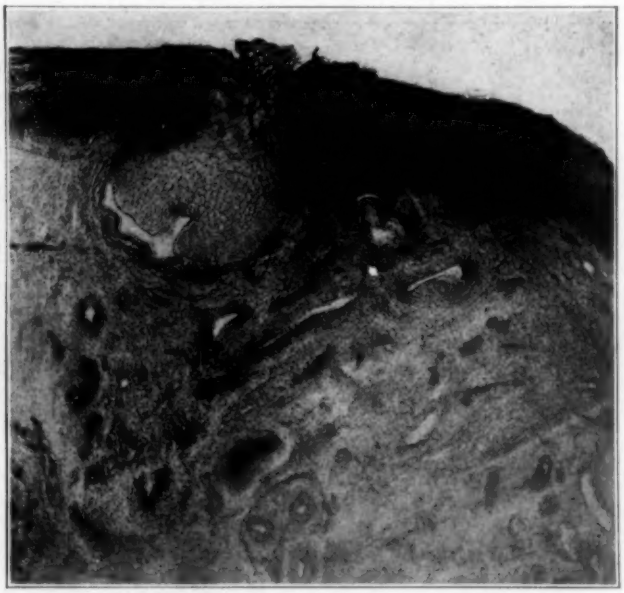

Fig. 10.—Distended gland almost entirely plugged with flat epithelium, only a small area retaining its original single row of cylindric cells.

evidence that there is an excessive cervical secretion whether the patient complains of it or not. But such an explanation is not, in itself, sufficient. There are profuse discharges in which erosion is not seen. Thus,

the lesion is not common in the virgin with retroversion uteri or descensus uteri and leukorrhea, nor is it seen to develop in the occasionally profuse discharge occurring in pregnancy. In certain leukorrheas, in other words, the flat epithelial cells of the portio are preserved. In others, these cells macerate and disappear,

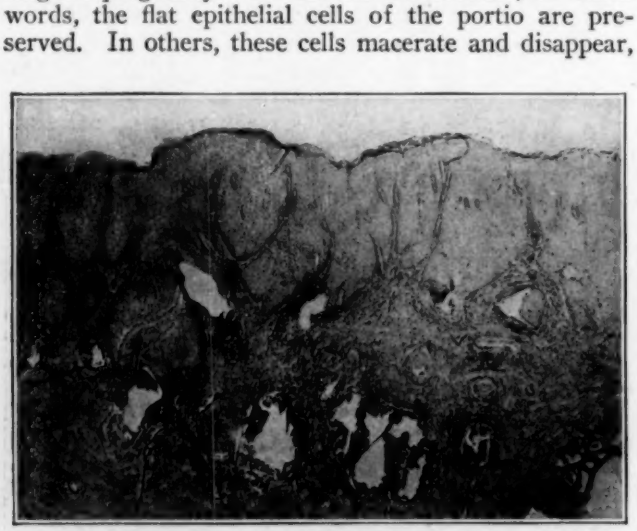

Fig. 11.—Epithelioma of the portio, resembling, or the same as, a true healing of erosion, with more deeply lying flat epithelium and an arrangement into alveoli; deeply lying round cell infiltration.

thus giving the cylindric, mucous-secreting cell opportunity to proliferate and start the formation of the simple erosion. There must be some other factor in addition to the presence of the leukorrhea itself, or, what is more probable, certain changes must take place in the nature of the discharge in order to produce ersion.

Much work has been done in past years not only on the bacteriology of the genital tract but also on the chemical reaction of the vaginal secretion, by Menge and Krönig, Harada, Salomon, Kuhn and Gräfenberg.

Fig. 13.—Extensive and massive round cell infiltration, with disintegration on the surface. Other sections of the same tissue show typical papillary erosion on one side and alveolar carcinoma on the other. In the presence of such marked infiltration, malignancy is to be looked for.

Salomon urges that, in treating leukorrhea, measures are to be avoided that tend to destroy saphrophytes, the aim being rather to induce proliferation of certain strains. This is best accomplished in a slightly acid medium. Kuhn regards the normal acid reaction of the vagina as the result of biologic processes which constitute the principal safeguard of the vagina. In the presence of pathologic processes, this forms the end object of therapeutic effort, an alkaline or a strongly acid reaction being detrimental to the integrity of the tissues. The researches of Gräfenberg show that the acidity of the vagina is dependent on menstruation for a percentage of lactic acid, and that this is higher before, during and after menstruation. Harada has shown a similar increase in lactic acid content of the vaginal secretion during pregnancy. This acid reaction has a wide range of variation but normally is not persistently high at any time, and quantitative fluctuations in the amount of acid are absent during the menopause. Dietl emphasizes the harmful effects of alkalinity, asserting that it abolishes the amylolytic ferment normally present in the cervical secretion.

As is well known, the normal equilibrium of the chemical reaction in the vagina is readily and markedly disturbed by infection. This is most evident in the acute reaction, but remains evident in the presence of chronic infection as well. Thus, the bacteriology of leukorrhea, as outlined by Curtis, comes into place as

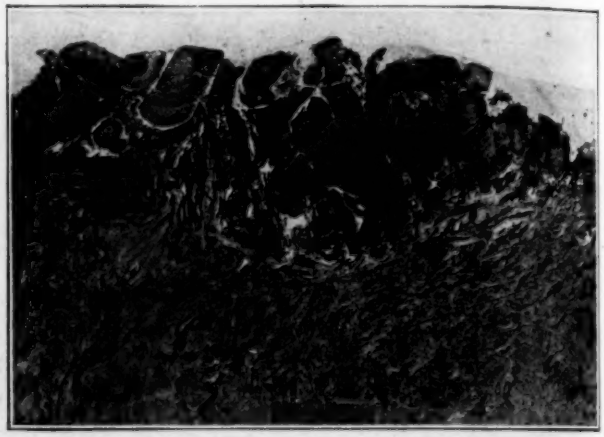

Fig. 14.—An early carcinoma of the flat cell type, resembling a follicular erosion in which all gland spaces have been occupied by flat epithelial cells with a disappearance of the cylindric cells.

the remote factor in the production of erosion. The cervical discharge, becoming alkaline under certain conditions or strongly acid under others, becomes an irritating factor. The multiple layered, squamous cell epithelium of the portio becomes macerated and disappears. The cylindric epithelial cells, which can proliferate in this medium, develop in the affected area; glands appear and the simple erosion is developed. From this it is only a step to the formation of the papillary phase of the lesion and the beginning of atypical cell proliferation.

The sequence, then, consists of (1) infection with resultant inflammation, and (2) leukorrhea and papillary erosion. Erosion of the follicular type is really an additional process, usually ascribed to attempts at spontaneous healing. Here is found a piling up of squamous cell epithelium, covering the previously formed glands on the portio and making possible the nabothian follicle and the cystic degeneration of the cervix. This return of the flat epithelial cell is metaplastic, a sort of epithelioma developing on a sort of adenoma. Atypical cell proliferation is increased, and it is here that disordered growth, intense activity, rapid proliferation and imperfect organization are chiefly

seen. Not only are the gland mouths plugged with resultant mucocele formation, but also flat epithelial cells are found deep in the glands themselves. Whether this represents direct cellular proliferation of the flat cell or metaplasia of the cylindric epithelium into many layers of squamous epithelium is of less importance than the fact of the change itself. In certain cases, the glands are so closely packed as to suggest strongly the direct development of the alveoli characteristic of malignant disease.

In the cytologic study of the cancer cell, certain mitochondrial disturbance or atypical arrangement has been described. This situation has been given some attention also with respect to the epithelial cell of the follicular erosion. As yet, however, this study has not been carried sufficiently far to warrant further remark.

The appearance of flat epithelial cells on the surface of a cervical mucous polyp protruding from the external os is another development long recognized. Its close resemblance to the follicular phase of erosion is striking. This condition resembles an epithelioma, the presence of squamous cells on the surface strongly suggesting metaplasia as the explanation of their origin. On the other hand, the penetration of these cells deeply into the gland lumen, or even into the stroma alongside the glands, rather suggests direct cellular proliferation.

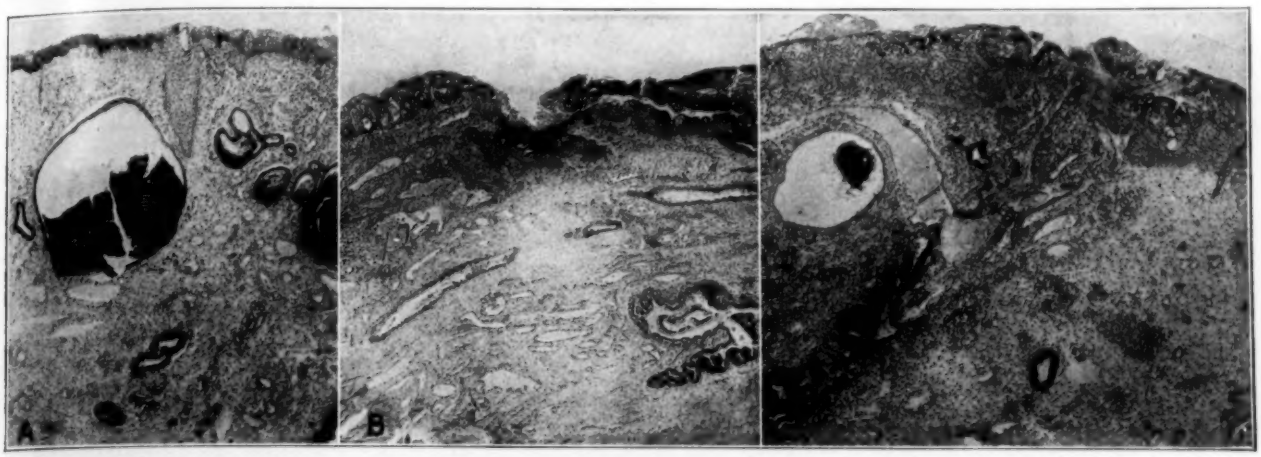

Fig. 15.—*A*, section from a cervical polyp which had projected out of the external os and taken on a flat epithelial edge; a condition closely resembling, or the same as, follicular erosion; *B*, another section, with atypical proliferation of flat epithelium beneath the surface and surrounding a gland; *C*, another section with the development of alveoli.

Fig. 17.—A cervical polyp which showed a heavy flat epithelial development on the surface; arrows show cellular proliferation in a deeply-lying distended gland.

The same overactivity, the same disordered growth and the same lack of organization are seen here as in the follicular erosion. Another development in most respects of a similar nature is not an erosion of the portio but the development in the cervical canal and on the cervical mucosa of a multiple layered squamous epithelium, a cervical epithelioma.

Fig. 20.—An epitheliomatous development in the cervical canal, resembling, again, follicular erosion and suggesting an origin for squamous carcinoma originating above the portio.

30 North Michigan Avenue.

Dangers Besetting Diagnosis.—One of the dangers which beset the medical student of today is that he may be tempted to neglect that thorough grounding in auscultation and percussion and the simpler chemical and microscopic tests which can be made at the bedside, and may come to rely on reports from the laboratory of examinations which he has not himself carried out. To this danger all examiners in medicine and surgery are keenly alive.—Garrod, Archibald: *Lancet* **2**:736 (Oct. 9) 1926.

SYPHILIS OF THE CERVIX *

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Ten years ago, a symposium on diseases of the cervix would hardly have included a discussion of syphilis, for at that time syphilitic lesions of the cervix were considered so rare as to be without any practical importance. Since then, our views on the subject have undergone a decided change. We now realize that the cervix may be the seat of syphilitic manifestations in every stage of the disease.[1]

PRIMARY LESION

The hard chancre of the cervix is usually located on the anterior lip. If engrafted on a preexisting erosion, it may more or less completely surround the external os; but even then the anterior lip is definitely more involved than the rest.

While the primary lesion on the outer genitals presents and retains its characteristic and pathognomonic aspect, the chancre of the cervix undergoes a rapid and variegated evolution from an uneroded induration to an ulcer, which in turn either heals quickly or transforms into an inconspicuous erosion. In the stage of greatest development, it appears as a more or less deep, funnel-shaped sore, with thickened, rounded edges which slope down to a smooth floor of a glistening brown. A grayish or white pseudomembrane, composed of necrotic tissue and, therefore, firmly attached, covers the base of the ulceration, and a thin red or reddish brown line encircles its periphery. There is usually very little, if any bleeding, even on manipulation. Multiple chancres are not exceptional.

There is no inflammatory reaction in the surrounding tissues; yet the entire cervix is often larger and harder from a general indurating edema and, when exposed in a speculum, fairly jumps into view. On account of this general infiltration, the typical parchment-like induration of the base cannot be mapped out, except in pregnancy when the cervical tissues are softened, or in prolapsed uteri, in which palpation is more easily accomplished.

On microscopic examination, many new capillaries are found. Around these and preexisting ones there are dense infiltrations of lymphocytes and plasma cells, at first more or less well circumscribed, later diffused through the tissues (fig. 3). Giant cells are present in varying numbers. The endothelium of the capillaries is swollen or proliferated, so that the lumen is narrowed or even obstructed. In larger blood vessels, the external coat is thickened. The histologic picture, therefore, is that of any chronic inflammation, and in itself by no means pathognomonic unless one succeeds in demonstrating *Spirochaeta pallida* in the tissues.

The cervical sclerosis has no particular symptomatology. Pain is absent; there is no bleeding, and the discharge is too scanty to attract attention. For this reason, the discovery of a primary lesion on the cervix is largely accidental, and it is probable that most cervical chancres are entirely overlooked. Statistical estimates of the frequency of the lesion, therefore, are only of relative value; they range from 1.5 [2] to 15 [3] per cent of all primary lesions in women.

The diagnosis presents no insurmountable difficulties. To be sure, the pathognomonic indolent swelling of the regional lymph glands, which occurs almost simultaneously with the appearance of the initial sclerosis and is of signal diagnostic help in external chancres, does not avail here, for the regional lymph glands of the cervix belong to the iliac group, and thus are not accesible to touch. The Wassermann reaction, likewise, fails, as it does not become positive until two or three weeks after the establishment of the chancre. Spirochetes, however, can very easily be found in the scant secretion of the sore; and I shall show later, in discussing the question of differential diagnosis, that there are certain features common to all syphilitic lesions of the cervix which must at least awaken the suspicion of the observer.

SECONDARY LESIONS

In the secondary stage, syphilis manifests itself on the cervix in the form of macules, papules and ulcers. These forms represent three successive stages in the development of lesions caused by scattered accumulations of *Spirochaeta pallida* in the squamous mucosa of the cervix. They usually are multiple and are associated with similar lesions in various parts of the vagina and the outer genitals.

The macules are a grayish white; larger macules or confluences of smaller ones are termed mucous patches. Their color is due to a thickening of the overlying epithelium, which may also lead to a very slight elevation of the affected area. By the warm moisture within the vagina, the superficial cell layers become macerated and are cast off. This leads to erosion. The latter is pinkish or brownish, but more often it is covered with a grayish exudate which, though small in amount, abounds in spirochetes. The Wassermann reaction is strongly positive in this stage.

Between the macule and the papule there is a difference only of degree. The epithelial proliferation is more pronounced and of an everting type, so that these structures stand out plainly above the level of the surrounding mucosa. If the hypertrophy of the epithelium becomes excessive, one speaks of a condyloma latum. Beneath the epithelium the same granulomatous changes take place that are observed in the initial lesion; namely, new formation of capillaries, perivascular infiltrations with lymphocytes and plasma cells, and thickening of the endothelium of the blood vessels. Maceration and erosion starts in the center of the elevated lesion and leads to a moist depression, which is surrounded by a symmetrical and slightly raised circle. The color is pinkish or reddish brown.

Neither macules nor papules produce any symptoms, and the secretion, while highly infectious, is much too scanty to be perceived by the patient. A speculum examination, therefore, will usually be a matter of chance, suggested, perhaps, by the presence of other secondary lesions about the vulva.

Secondary ulcers, which apparently develop from papules, appear in various forms. In some cases they are red, varied in size, and devoid of characteristic features. In most instances, however, they present a color which I have never found in any other but syphilitic conditions. I refer to a marked yellow or

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* Read before the Section on Obstetrics, Gynecology and Abdominal Surgery at the Seventy-Seventh Annual Session of the American Medical Association, Dallas, Texas, April, 1926.

1. Gellhorn, George; and Ehrenfest, H.: Am. J. Obst. **73**: 894 (May) 1916.

2. Skutul: Zentralbl. f. Gynäk. **36**: 1781, 1912.

3. Matzenauer: Biologie und Pathologie des Weibes **5**: 552, 1925.

whitish-yellow discoloration which obviously is due to the fatty degeneration of the superficial cell layers. Within the yellow, there is an undertone of red or pink distributed in the form of dots or fine lines which represent the many newly formed and dilated capillaries. Sometimes the relation of the two shades of color is reversed. There is no pain, either spontaneous or on touch, and very little bleeding, but in all cases there exists a profuse, yellow, mucopurulent discharge with a considerable amount of detritus and a sickly odor which is different from the stench of cancers or necrotic fibroids.

A third type of secondary ulcerations, in which bleeding is the predominating symptom, came under my observation in two instances during the last year. The following case may serve as an illustration.

CASE 1.—A mulatto girl, aged 25, complained of continuous bleeding of more than four weeks. A large ulcer occupied the anterior wall of the cervix and part of the fornix, another was located at the external os, and two smaller ones were found on the anterior vaginal wall. All ulcers were finely granular and slightly raised, and they emitted a very profuse, thin, bloody fluid.

The diagnosis of syphilitic ulcer was amply supported by the history, a strongly positive Wassermann reaction, and typical clinical observations. The patient exhibited, in particular, that profound general systemic depression from syphilis which is so much more marked in women than in men, and to which I have called attention elsewhere.[4] Repeated search for spirochetes remained negative, perhaps because there was too much blood on the slides, but an excised piece showed typical granulomatous changes on microscopic examination. Complete healing took place in less than two months, merely from general antisyphilitic treatment without any local applications.

This rapid response to antisyphilitic treatment is common to all secondary lesions, and is of considerable diagnostic value.

TERTIARY LESIONS

The essential form is that of a gumma which, in the majority of instances, undergoes necrosis and ulceration. If the tissue proliferation predominates, we speak of gumma; if retrogressive changes prevail, we speak of tertiary or gummatous ulcer. The histologic picture is essentially the same as in primary or secondary lesions. The process may involve the vagina or extend into the cervical canal, and is frequently associated with similar lesions elsewhere. The consistency is firm, but becomes soft under the influence of tissue necrosis. The most characteristic color is yellow, though various other shades may be observed. Bleeding or profuse mucopurulent discharge is present; but pain is absent, though there are exceptions, notably when sclerosed blood vessels can be felt along the pelvic walls. The lesions may heal spontaneously with formation of scar tissue. More often, antisyphilitic treatment is required to bring about rapid improvement; refractory cases are, on the whole, infrequent. Local treatment is altogether useless.

Gummas, as a rule, are of slow growth. I[5] have reported elsewhere a unique case of "malignant" syphilis of the cervix in a colored girl, aged 17, in whom the syphilitic infection ran its entire course from the initial stage to a fatal ending in less than a year. When the patient first came under my observation, she had a secondary ulcer of the cervix with spirochetes in the secretion. Within two months, this ulceration changed into a large cauliflower tumor (fig. 1) which, histologically, presented a clear-cut picture of gumma (fig. 3). In spite of antisyphilitic treatment, the patient died of a perforative peritonitis three weeks later. The gummatous process had extended from the cervix to the sacrum; secondarily, microbes invaded this infiltration from the necrotic surface of the cervical tumor and brought about an abscess which eventually broke into the abdominal cavity.

4. Gellhorn, George: Am. J. Syph. 4: 480 (July) 1920.
5. Gellhorn, George: Interstate M. J. 25: 506 (July) 1918.

DIFFERENTIAL DIAGNOSIS

The main reason why syphilis of the cervix has been diagnosed so seldom is that gynecologists and practitioners have not given enough thought to the subject. Once the profession becomes fully aware of the ever-present influence of syphilis in the realm of gynecology, syphilitic lesions of the cervix will no longer be considered rare. In fact, their recognition is not exceptionally difficult. However, in differentiating syphilitic from nonsyphilitic conditions, it is well to remember certain general characteristics of syphilitic lesions of the cervix; namely, that:

(*a*) Syphilitic ulcers, as a rule, produce very little secretion; only extensive tertiary ulcers or necrotic gummas cause a pathologic discharge.

(*b*) There is usually no pain, either spontaneous or on touch.

(*c*) Syphilitic lesions are frequently at some distance from the external os; this hardly ever occurs in nonsyphilitic ulcerations.

(*d*) Syphilitic ulcers are characterized by their sharp outline, their yellowish color, and the absence of inflammatory reaction of the surrounding mucosa.

For further details the reader is referred to the article previously cited.[1] It must suffice in this brief review to say that the following conditions should be taken into differential considerations: erosion, soft chancre, tuberculous ulcer, gonorrhea and carcinoma.

It is the last named condition which occupies a very important place in the differential diagnosis. A voluminous literature proves that chancre and, particularly, gumma have very often been mistaken for carcinoma. As a result, unnecessary operations have been performed aplenty. A glance at figures 1 and 2 will readily explain such mistakes. Even an expert would have difficulty in distinguishing between the two tumors unless he took into very careful account all other features of the case, and had at his disposal the microscopic sections which in the one case show typical gumma formation (fig. 3) and in the other, an equally typical squamous cell carcinoma (fig. 4). But even the microscope may fail if gumma or carcinoma are in far advanced and necrotic stages. In daily practice, therefore, the proposition amounts to this: The overwhelming majority of cancer patients present themselves in an inoperable state. If there is the slightest doubt as to the true nature of the disease, an attempt with antisyphilitic treatment should be made. We know that syphilitic lesions respond rather promptly to appropriate treatment and, therefore, not much time will be wasted even if antisyphilitic therapy proves to be a failure.

Of the multitude of interesting and important problems arising from the study of syphilis of the cervix, I shall touch briefly on only three: infectiousness of the cervical secretion, dystocia from syphilitic alteration of the cervix, and the transition of syphilis into carcinoma.

INFECTIOUSNESS OF CERVICAL SECRETION

It is self-evident that the cervical secretion in the presence of a syphilitic lesion, extending, perchance,

into the cervical canal, must be highly infectious. The question arises whether a man may become infected by cohabiting with a syphilitic woman even though her cervix does not exhibit any syphilitic lesion. In other words, are the physiologic secretions from the genitals of syphilitic women infectious?

Theoretically, one might give an affirmative answer, in view of the fact that the syphilitic infection spreads

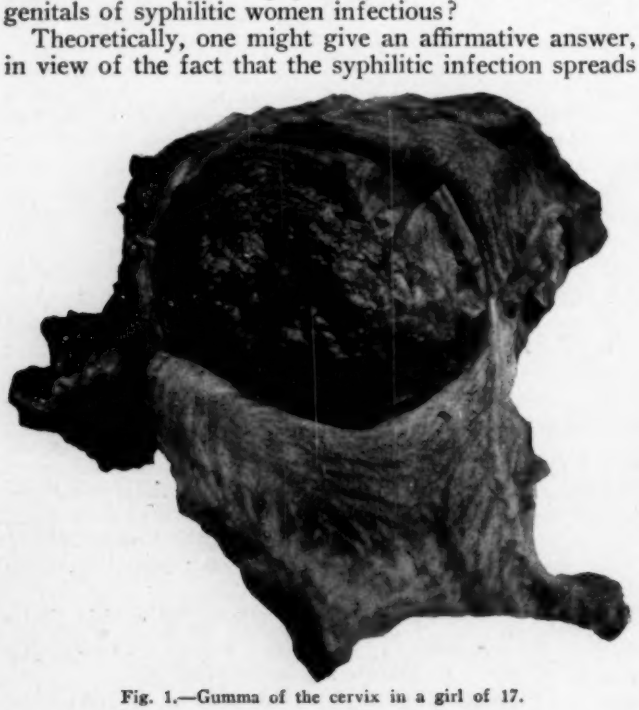

Fig. 1.—Gumma of the cervix in a girl of 17.

by way of the blood stream into all tissues and organs of the body. The infectiousness of the blood of syphilitic patients and the presence of spirochetes in the blood are a matter of record.[6] Graefenberg [7] actually found spirochetes, in four cases, in the secretion from the cervix, though there was no lesion on the latter. In the investigations repeatedly quoted,[1] Ehrenfest and I succeeded twice, in a large number of examinations, in finding spirochetes in the secretion of macroscopically normal cervices. We therefore concluded that during the secondary stage a woman may remain infectious even though there are no syphilitic manifestations about the genitalia. Corroborative evidence was supplied later by Lesser [8] and Fuchs.[9]

In the meantime, however, I observed a syphilitic woman with several ulcerated patches within the cervical canal which constituted the first and only manifestation of secondary syphilis.[10] The discovery of these lesions was made possible by an old tear which permitted the spreading apart of the cervical lips in the speculum. Typical spirochetes were demonstrated in large numbers in the secretion of the patches. It is therefore probable that cervical secretions contain infectious spirochetes only in the presence of a local, albeit hidden lesion. The practical conclusion is that routine search for spirochetes must become a part of our technic before we may pronounce a patient absolutely cured.

DYSTOCIA FROM SYPHILITIC ALTERATION OF THE CERVIX

As pointed out by me [11] in a previous paper, pregnancy materially modifies the clinical course of syphilis. Owing to the increased blood supply of the genitals during pregnancy, all syphilitic manifestations tend to become more marked and are more persistent than in the nonpregnant state. Thus, the chancre is apt to be greatly enlarged and to cause an exceptional degree of diffuse infiltration throughout the entire cervix. A dense, unyielding scar at the external os or even within the cervical canal may remain after the healing of a primary lesion. Secondary ulcers in pregnancy are considerably more destructive and leave cicatricial tissues behind. Gummatous changes, finally, persist in the form of dense indurations. From any of these causes there may result a rigidity of the cervix which may become a serious obstacle to delivery. A number of illustrative case reports have been published, particularly in France and Italy. Ribemont-Dessaignes and Lepage [12] devote a separate discussion to dystocia from this source in the latest edition of their textbook, and Henrotay [13] only recently found himself compelled to perform a cesarean section because of an annular syphilitic sclerosis of the cervix.

This threatening dystocia, then, is another reason why all syphilitic women should be subjected to energetic antisyphilitic treatment, no matter in which stage of pregnancy they come under observation.

TRANSITION OF SYPHILIS INTO CARCINOMA

It may be accepted as an established fact that syphilis represents one of the predisposing factors in the etiology of cancer. Any part of the body which in the past has been the seat of a syphilitic lesion becomes a place of lessened resistance wherein a cancer may develop. Syphilitic persons, says Horand,[14] are potential candidates for cancer and live forever beneath a sword of Damocles. If a cancer occurs in a syphilitic subject, it will always seek the vulnerable spots that have already been marked by syphilis.

This is fully borne out by the experiences of the dermatologists who often have seen a syphilitic lesion of the skin become transformed into epithelioma. The observations of surgeons leave no doubt as to the

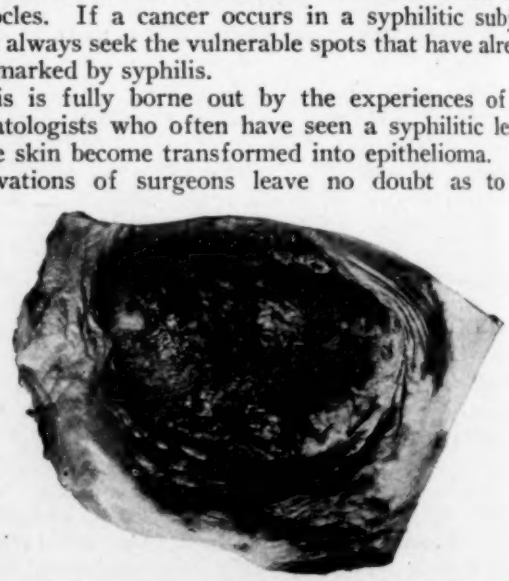

Fig. 2.—Cancer of the cervix in a woman of 57.

syphilitic basis of many buccal and glossal cancers; and the genito-urinary specialists are familiar with the occurrence of carcinoma of the penis and testis as sequels to syphilitic diseases of these organs.

Gynecologic literature, on the other hand, is utterly silent on the subject. Yet, as far as the cervix is concerned, a relationship between syphilis and cancer appears entirely reasonable in a good many cases.

6. Fruehwald: Dermat. Wchnschr., May 29, 1915, p. 513.
7. Graefenberg: Arch. f. Gyneck. **87**: 190, 1909.
8. Lesser: München. med. Wchnschr. **66**: 1501, 1909.
9. Fuchs, D.: Deutsche med. Wchnschr. **46**: 1165 (Oct. 14) 1920.
10. Gellhorn, George: Surg. Gynec. Obst. **29**: 374 (Oct.) 1919.
11. Gellhorn, George: Surg. Gynec. Obst. **32**: 535 (June) 1921.
12. Ribemont-Dessaignes and Lepage: Traité d'obstétrique, Ed. 9. Paris, 1923, p. 996.
13. Henrotay, J.: Gynéc. et. obstét. **4**: 336 (Oct.) 1921.
14. Horand: Syphilis et cancer, Paris, 1908, p. 58.

It may be that leukoplakia forms the connecting link. Leukoplakia is a disease of certain mucous membranes, and is characterized by an increased formation of keratin in the superficial layers of the squamous epithelium, and a marked hyperplasia of all other components of the mucous membrane until the latter closely resembles the epidermis in microscopic appearance. These changes result in the production of bluish, pearly

Fig. 3.—The histologic picture of syphilis is the same in all three stages. It is characterized by new formation of capillaries, perivascular infiltrations of lymphocytes and plasma cells, and endothelial proliferations within the lumen of blood vessels. Syphilis produces a connective tissue reaction.

or grayish-white plaques. Syphilis is the most common though not the only factor in the etiology of leukoplakia; but, as Power [15] maintains, it is remarkable how few other causes of chronic irritation produce this particular change in mucous membranes.

On the other hand, it is generally recognized that leukoplakia shows a very pronounced tendency toward malignant degeneration, and for the cervix in particular the relationship between leukoplakia and cancer is definitely established.

It is, further, conceivable that there is a direct transition from syphilis into cancer of the cervix. Thus far, there are only two reports in existence, one from Denmark, the other from Italy, which, if not fully conclusive, are at least highly suggestive. I will record three personal observations, reserving detailed description for a later publication.

REPORT OF CASES

CASE 2.—A colored woman, aged 38, was admitted to the Barnard Skin and Cancer Hospital with a gigantic gumma of the cervix which did not decrease under antisyphilitic treatment. I therefore attempted to amputate the cervix, but failed because of the enormous size of the growth and, after having cut off a part of the cervix, had to leave the rest to heal by granulation. The healing process proceeded very well; and the patient remained in a fair state of health, and without further treatment, for more than a year, when clinical manifestations of cancer developed suddenly and led to the death of the patient within a few months. Microscopic examinations were made repeatedly both before and after the appearance of the malignant growth.

CASE 3.—A colored woman, aged 35, was admitted to the hospital with a typical and extensive ulceration of the cervix. The edge of this ulceration exhibited a well marked area of leukoplakia. An excised piece showed merely chronic inflammation. Antisyphilitic treatment was not well borne and yielded no results. Five and a half months later a second exploratory excision was made. This time, the microscope revealed a beginning squamous cell carcinoma within typical granulomatous tissues. The patient rapidly went from bad to worse, and died three months later.

CASE 4.—Even more interesting was this case. A white woman, aged 34, whose menstruations were perfectly normal and who had neither discharge nor irregular vaginal bleeding, presented, on the anterior cervical lip and separate from the external os, a typical, slightly elevated, syphilitic ulceration which was surrounded by a thin red line of demarcation. It was a bright, glistening yellow, here and there interspersed with small red dots; its consistency was soft, but there was no bleeding on manipulation. The history, general clinical observations and the Wassermann reaction confirmed the diagnosis of syphilis.

The patient had consulted, a few days previously, a physician who suspected cancer and who had excised a small piece which he sent to a laboratory. She then came to me. I diagnosed syphilis and sent an excised piece to another laboratory. The first pathologist made the diagnosis of carcinoma, the second that of granuloma. I later studied the sections, and found that both men were right. What happened was that, in this syphilitic ulceration, carcinoma had developed in one place, and so recently that it had not yet altered the gross appearance and clinical behavior of the ulceration. This is probably the first instance in gynecologic literature of coexistence of syphilis and cancer of the cervix. Under energetic antisyphilitic treatment, the general condition of the patient improved, but the ulcer began to bleed freely on touch. It gradually lost its former yellowish color and assumed the appearance of a typical carcinomatous growth. The patient passed out of my hands, but I ascertained that she received, elsewhere, three radium treatments, and was still alive and well almost two years after I had first seen her.

The great importance of this subject and the novelty of these three observations have seemed to me to justify their inclusion in this symposium.

Fig. 4.—Microscopically, carcinoma is distinguished by the proliferation of the surface epithelium and its invasion of the underlying tissues. Carcinoma produces an epithelial reaction.

SUMMARY AND CONCLUSIONS

The foregoing discussion has brought out the fact that syphilis of the cervix occurs far more frequently than is generally assumed, and that it may exhibit manifestations in any of the three stages of the disease.

Primary and secondary lesions, while sufficiently characteristic, are apt to be overlooked because they

15. Power and Murphy: System of Syphilis, London, 1914.

produce no symptoms. On the other hand, tertiary lesions which appear in the form of gummas or gummatous ulcers give rise to bleeding and discharge, and resemble carcinoma to such an extent that many patients have erroneously been subjected to unnecessary and dangerous operations.

In contradistinction to the usual protracted course of the disease was the observation of "galloping" syphilis of the cervix in which the infection ran its entire course from the initial lesion to a fatal ending in less than a year.

A number of interesting and important problems are intimately connected with the subject of syphilis of the cervix. These are: (*a*) the infectiousness of cervical secretions in syphilitic patients; (*b*) the possibility of dystocia from rigidity of the cervix caused by syphilitic lesions and (*c*) the transition of syphilis into cancer of the cervix.

The profession at large has, in the past, given too little thought to the subject. Once its attention is aroused, syphilis of the cervix will cease to be a rare disease.

Metropolitan Building.

DIATHERMY IN THE TREATMENT OF GONORRHEAL ENDOCERVICITIS*

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To obtain success in the treatment of gonorrheal endocervicitis through the use of diathermy, one must maintain a clear perspective of the object sought for; i. e., destruction in situ of the thriving gonococcal organisms that are embedded in and protected by the tissues of the cervix. At the same time, the destructive agent should not produce or cause any permanent injury to the endocervical canal.

We must accept the fact that carefully controlled clinical and laboratory study has definitely shown that gonorrhea persists in women largely because of the continued presence of the gonococcus in the paraurethral, the cervical and the endocervical glands. This, in the majority of instances, is the cause of the chronically infected lower genital tract in women.

OTHER METHODS FOR DESTROYING THE GONOCOCCUS IN SITU

Before the introduction of modern methods of heat induction, the favorite method for attempting to destroy the gonococcus in the endocervical glands was the use of powerful bactericides and caustic protein coagulants, such as silver nitrate and iodine.

For the most part, all these remedies failed because they coagulated both tissue and bacteria, and, as a result of the coagulated tissue, the remedial agent was unable to penetrate to the level of the more deeply lying organisms that were responsible for the continuance of the infection.

With the exception of acriflavine, mercurochrome-220 soluble and, more recently, metaphen, the gonococcides available for the treatment of gonorrhea in the female are derived principally from silver nitrate. All of these preparations owe such germicidal virtue as they possess to their generalized ability to coagulate protein. Accordingly, there is little or no selectivity involved in the treatment of localized gonococcal infections. Occasionally, the continued application of germicidal agents will bring about a complete disappearance of the gonococci in the endocervical canal, but in the majority of cases the treatment is a failure and, as a consequence, either cauterization or surgical excision is offered for the removal of the chronically infected endocervical canal. The former often produces irreparable stenosis, and the latter results in anatomic mutilation.

VAGINAL DOUCHES, TAMPONS AND VACCINES

The fallacy of using vaginal douches as a curative agent in cervical infections is very obvious, and from this point of view might be condemned, since they create a false sense of security by easing the patient's mind by the fact that she is doing something for her infection.

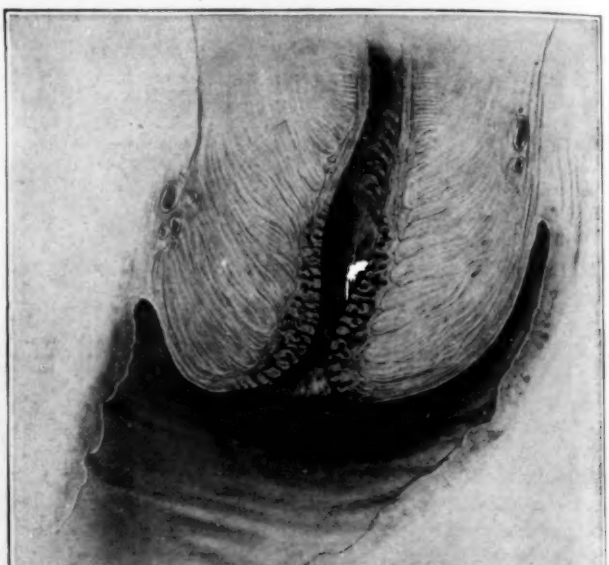

Fig. 1.—Exact situation of the endocervical glands and their relation to the cervical canal. They extend from the external to the internal os, a distance of about 4 cm., and vary in depth from 1 to 6 mm. Consequently, a thermophore from 3.5 to 4 cm. long should come in contact with all the infected glands.

In our opinion the vaginal douche has the same cleansing effect that a bath has to the body; nothing more.

Commercial vaginal tampons, because of their great size, often prevent uterine drainage by acting as a plug to the cervical canal. It is our firm belief that in these instances they must do more harm than good. We believe that vaginal douches and medicated tampons can be considered only as adjuncts in the treatment of gonorrhea. There is no scientific evidence, either clinical or experimental, that they are definitely curative in action, and their application must be carefully controlled lest they interfere with the natural conditions of drainage or provoke more extended tissue infection.

Theoretically, gonococcus vaccine should prove of benefit in deep-seated infections of the endocervical canal. Unfortunately, however, most vaccines are nothing more than autolyzed solutions of the gonococcus, and do not cause specific antibody formation.

In those instances in which improvement, or even cure, has been noted following the injection of mixed

*Read before the Section on Obstetrics, Gynecology and Abdominal Surgery at the Seventy-Seventh Annual Session of the American Medical Association, Dallas, Texas, April, 1926.

vaccines or serums, it seems likely that the accompanying fever, rather than the production of specific antibodies, was responsible for the beneficial effect.

EFFECTS OF HEAT ON THE GONOCOCCUS

The safety of modern surgery rests on the known vulnerability of pathogenic organisms to heat. Unfortunately, the majority of bacterial cells are even more

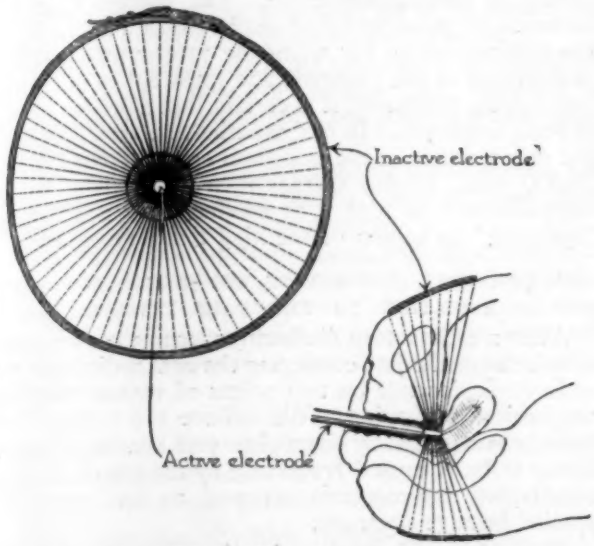

Fig. 2.—Schematic drawing, showing the way the diathermy current passes from the active electrode (cervical thermophore) to the inactive electrode (encircling mesh belt) and how it passes in all directions, insuring at each application a uniform diffusion of heat to the whole cervical canal.

resistant to induced heat than a given normal body cell, and therefore cannot be destroyed in the living organism directly without attendant tissue extinction. This is not true of the gonococcus. One who is familiar with the management of gonorrhea in the male is frequently impressed with the number of "spontaneous cures" when an epididymitis or prostatitis has been accompanied for a number of hours with a temperature of from 102 to 103 F.

Gonococci frequently disappear permanently from the urethra during respiratory infections, and the same thing has been noted during the pyrexia of typhoid. It has been demonstrated that the gonococcus is instantly destroyed at a temperature of 113 F. (45 C.) or at 104 F. (40 C.), prolonged for from six to eight hours.

Since the normally nourished epithelial cell can survive a temperature of 118 F. (47.8 C) for one hour, and connective tissue cells even higher temperatures for longer periods, the rationale of the therapeutic possibilities for destroying the gonococcus within the living tissue by heat is manifest.

DIATHERMY IN SPECIFIC ENDOCERVICITIS

When inflammation is due to infection, there is also increased metabolism, accompanied by localized or generalized increase in body temperature. Inflammation is Nature's attempt to cure, and its principal factor is the production of heat. Zimmern defines diathermy as "a form of thermotherapy which utilizes electrical energy for the production of thermal effect in the depth of the tissues." By means of diathermy, physiologic heat is generated within the tissues, thereby assisting Nature to react and cure disease. The actively circulating, heated blood causes absorption of the products of inflammation, promotes tissue oxidation, stimulates metabolism and by the ultimate relief of congestion produces tissue drainage, thereby relieving pain.

To any one familiar with the clinical application of diathermy, it is apparent that in our attack aimed at the destruction of the gonococcus we have a veritable two-edged sword; i. e., the effect of regulated, deep-seated, localized heat on metabolism, and the specific action of heat on the gonococcus.

Our problem being purely technical, the results will depend on:

1. A careful recognition of the indications and contraindications for the application of diathermy in specific infections.
2. The utilization of a machine that delivers the proper current.
3. An efficient method of conveying the heat radiation to the part involved.
4. A period of application sufficiently prolonged to satisfy practically the theoretical considerations.

INDICATIONS AND CONTRAINDICATIONS

In this paper we are considering only the use of diathermy in infections of the endocervix caused by the gonococcus of Neisser. Its use in other forms of infection is not contraindicated.

Endocervical diathermy is contraindicated, however, during pregnancy and in the early acute stages of the infection, or when evident, active pelvic inflammatory changes, such as salpingitis or pelvic cellulitis, are present.

In the early acute stages of the infection, the daily use of the vaginal bath speculum combined with a hot sitz bath helps to allay the accompanying vulvovaginitis and cervicitis. It is well to wait until the acute inflam-

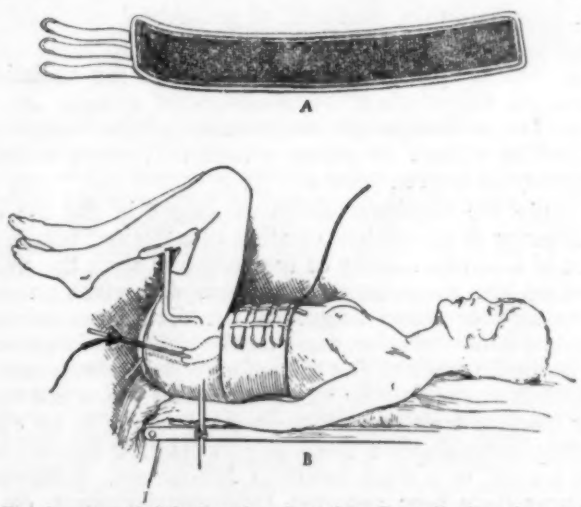

Fig. 3.—*A*, mesh belt (inactive electrode); *B*, application of mesh belt (inactive electrode) to patient's body and the cervical thermophore (active electrode) in situ. It is the custom to insert a bivalve speculum, wipe the cervix clean with a solution of sodium bicarbonate, insert the thermophore snugly within the cervix, and anchor it to the speculum by means of a rubber band passing from the thumb screw of the speculum to the binding post on the thermophore, using enough tension to keep the thermophore in place.

matory symptoms have subsided before applying the thermophore to the endocervical canal.

UTILIZATION OF A MACHINE THAT DELIVERS THE PROPER CURRENT

Fundamentally, a diathermy current is one of high frequency, and when it passes through the various tissues of the body it produces an increased temperature.

It is the wave length, or frequency, of a so-called diathermy current that makes this radiation markedly different in its physiologic effects from that of any other source.

Frequency and wave length are synonymous: when the frequency increases, the wave length becomes correspondingly less. It is obvious that the relation existing between wave length and frequency is expressed by saying that a short wave length is equivalent to a high frequency. Different wave lengths of radiation are generally capable of producing different physiologic effects. A survey of the existing high frequency machines available disclosed the fact that seven different manufacturers of instruments called "high frequency"

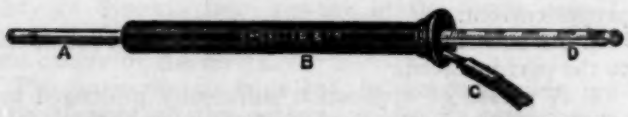

Fig. 4.—Cervical and urethral thermophore: *A*, very thin nickel silver shell, closed at one end and measuring 5 mm. in diameter; *B*, hard rubber sheath or covering, 15 cm. long and 1 cm. in diameter, attached to shell, thus allowing an extension of 4 cm. for insertion in the cervical canal; *C*, insulated terminal, provided for attachment of the cable, supplying current; *D*, thermometer, which is inserted to the full depth of the shell and the reading taken from the exposed portion. The greatest accuracy is necessary in constructing the instrument to insure its proper performance.

and "diathermy" apparatus furnished a diathermy current ranging in frequency from 500,000 oscillations per second to more than 3,000,000 oscillations per second.

One of the material factors involved in the treatment of gonococcal infections by the use of diathermy is the lack of standardization of machines. This is most important, for without a proper diathermy current the whole procedure is a failure, despite the fact that proper electrodes are used and for a sufficient period of time.

From the standpoint of the machine, the factors that are essential in the treatment of gonorrheal endocervicitis are:

1. The frequency or wave length of the radiation used.
2. The milliamperage or intensity of the radiation.
3. The voltage or pressure used to force a certain intensity to desired depths

. Since the dominant objective sought in the use of diathermy is the effcient creation of a desired temperature in a certain locality of the body and since the creation of the temperature is in part dependent on the frequency or wave length of the diathermy current used, it is obvious that there can be only one frequency of optimal efficiency for this effect. It has been established independently by us in our urologic practice that the efficient treatment of gonococcal infection by diathermy necessitates a frequency of 800,000 oscillations per second, or a wave length of 375 meters. Whatever failures have been reported (abdominal cramps, etc.) we feel sure are, in the vast majority of instances, attributable to failure to fulfil the diathermy requirements, as a long wave length means low frequency, and a low frequency is often accompanied by muscle excitation.

The second factor is that of current intensity as measured by the milliamperage. This, in our opinion, is not quite as essential as is the factor of frequency. Different individuals can tolerate different intensities of heat, and it is becoming more and more the practice to depend on this individual tolerance for the ultimate measure of intensity, rather than to attempt to fix an arbitrary limit for intensity expressed in milliamperage. The factor of milliamperage should be such as to involve the maximum, sufficiently tolerable intensity that the patient can stand, and which is sufficient to furnish a local temperature, as measured by any adequate thermometer, to insure a degree of heat in excess of the lethal temperature threshold of the diplococcus of gonorrhea, yet below the limit of safety to the endocervical epithelium.

It is probably impossible, at least with the instruments furnished to date, to regulate the voltage independently of the milliamperage. The voltage, therefore, becomes of secondary and really minor importance to the milliamperage, for when the proper milliamperage is delivered at the electrode and imparted to the tissues undergoing treatment, it is certain that a proper voltage is being employed. In our experience a suitable voltage for this work is in the neighborhood of from 7,000 to 10,000 volts. Higher voltage than this leads to serious complications, in that it is conducive to a disturbing "sparking" by reason of the high tension created.

AN EFFICIENT METHOD OF CONVEYING THE HEAT RADIATION TO THE PART INVOLVED

After a satisfactory diathermy machine has been procured, the method of conveying the heat radiation to the endocervix depends on two points of contact and their mechanical perfection. We believe the failures that have been reported by some observers are due in part to faulty technic, caused frequently by the use of a poorly constructed thermophore, as well as an imperfectly applied inactive electrode.

The Active Electrode.—As shown in figure 4, the thermophore consists of a very thin, nickel silver shell (*A*) closed at one end. At the present time three sizes are available, 3, 5 and 7 mm. in diameter.

A hard rubber sheath or covering (*B*), 15 cm. in length and 1 cm. in diameter, is attached, thus allowing an extension of 4 cm. for insertion into the cervical canal.

An insulated terminal (*C*) is provided for attachment of the cable to supply the current. A thermometer (*D*) is inserted to the full depth of the shell, and the reading is taken from the exposed portion. All thermophores are perfectly straight, with rounded points, the thermometer fitting snugly within the shell.

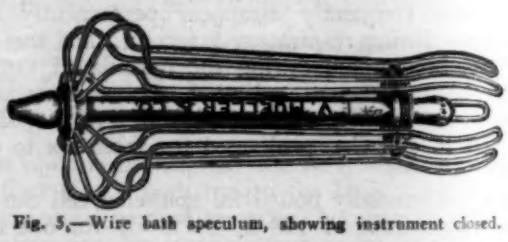

Fig. 5.—Wire bath speculum, showing instrument closed.

In applying the smaller electrode in a nullipara, care must be used to employ lower amperage, as the smaller electrode concentrates the heat much more rapidly than the larger one.

The Inactive Electrode.—This consists of a wide strip of copper mesh which is mounted on a wider, thick strip of heavy Swedish rubber sponge material. These are surrounded and fastened to a still wider canvas strip fashioned in the form of an abdominal belt.

The belt is applied snugly, so that it surrounds the lower abdomen and pelvis. It is easily applied and cannot slip or be displaced.

By having the inactive electrode surround the entire trunk, we insure a uniform dissemination of heat on all sides of the cervical thermophore. The electrode surface is so great that the mesh fits directly against the

skin without danger of sparking or burning, thus obviating the necessity for soaping the mesh or interposing salt solution pads.

PERIOD OF APPLICATION

In our original communication, we stated that treatments were continued from thirty to forty minutes at from 116 to 117 F. (from 46.5 to 47 C.). We have continued this technic to the present time, but we have occasionally kept up the treatment for sixty minutes or longer with a varied reduction in temperature.

It should be emphasized that, in order to be successful in the cure of gonorrheal endocervicitis, infection in the urethra and in Bartholin's and Skene's glands must also be eliminated.

The consistently discordant results reported by a few observers defy analysis in that they lack an exact specification of all the factors mentioned.

It is a reflection on those using high frequency currents if they fail to recognize that the very designation of the current, "high frequency," has never led them to inquire into just how high or how low the frequency or wave length should be for accomplishing a given result.

CONCLUSIONS

1. Diathermy is a successful means of eliminating endocervical gonorrhea.
2. The mechanism effecting such cures depends on:
   - *A.* A satisfactory high frequency machine.
   - *B.* The method of conveying the heat radiation (active and inactive electrode), which should be properly designed and adjusted.
   - *C.* The time of application of heat radiation, that is, any reasonable limit of not less than twenty-five minutes, which may extend as long as sixty minutes, absolutely controlled by the thermometer readings.
3. Treatments must be continued until it is definitely proved that the gonococcus is permanently eliminated from the tissues. This presupposes a sufficiently prolonged clinical observation and the use of accurate technical methods for determining a cure.
4. The clinical results attained by the careful application of this method have been demonstrated to our complete satisfaction in the management of approximately 150 patients, during a period of more than six years.

30 North Michigan Avenue.

ABSTRACT OF DISCUSSION

ON PAPERS OF DRS. MILLER, WARD, LYNCH, MATTHEWS, CULBERTSON, GELLHORN, AND CORBUS AND O'CONOR

DR. ARTHUR H. CURTIS, Chicago: The encouraging results obtained by cautery treatment of endocervicitis are often attributable to the establishment of thorough drainage rather than to eradication of the diseased tissues. The complete therapeutic result of a single treatment may not be evident until nearly a year has elapsed. On this account we should be deliberate about making additional cauterizations. Another point about cervicitis is that we must be wary of placing undue emphasis on the cervix as a focus of infection, and as responsible for various systemic disturbances. The problem of greatest importance is the treatment of cervical cancer. Two years ago I stated that I had turned to the use of radium in nearly all cases of cervix carcinoma because of the discouraging results obtained by surgical removal. Twelve years' experience with radium indicates that it yields approximately twice as many permanent cures as were formerly obtained by radical operation. In 1924 I advocated radium application according to a definite plan. I have inserted radium needles in a palisade about the periphery of the growth for a period of five years, and can report a much lessened incidence of broad ligament recurrences. For three years, I have employed diathermy in addition to radium. The number of apparent cures has greatly increased, until now, with radium and diathermy, I have become almost optimistic in the treatment of moderately extensive cases. Cooking the carcinoma by diathermy is particularly advantageous, because there is subsequent smooth separation of the slough, leaving a relatively clean wound surface. In addition to the cancerous tissue, which is grossly destroyed and sloughs away, nearby nests of cancer cells are also killed by the heat that penetrates the adjacent tissues. Under certain conditions, direct inspection of the cervical canal is desirable. Slight upward displacement of the bladder, bisection of the cervix anteriorly, and the rolling outward of the cut surfaces by means of bullet forceps can be accomplished within a few moments.

DR. H. P. NEWMAN, San Diego, Calif.: Why, in this day and age of preventive medicine, do we allow the progress of cancer to the extent that it becomes inoperable, or at least is fatal? If proper examinations are made, as they should be in all cases of gynecologic disturbances, conditions would be obtainable that would easily call to the attention of the trained man preventive measures that would, perhaps, remove from the operative field many of these excessive and rather mutilating procedures. The operation that I term utriculoplasty is a plastic operation on the cervix. Plastic work of all kinds needs exactness, and a little nicety of technic, which necessitates proper tools. Consequently, I have provided a few small instruments that are of assistance in the operative work. I have an instrument which is the old-time bullet forceps but is capable of being used as a retractor to draw the cervix down; then a knife is passed through the cervix as it is drawn down at right angles and a clean cut is made of the anterior lip and the posterior lip. This simply means that in the living subject the flaps that are made on either side fall together and really constitute a restored cervix somewhat shorter, depending, of course, on the amount or extent of the incision. Suffice it to say that the passing of the suture from before backward in each lip or vice versa is a very simple thing. I use a special needle and either silkworm gut or catgut. Silkworm gut has the advantage of having a splintlike action, whereas catgut softens.

DR. JOHN O. POLAK, Brooklyn: I wish to call attention to the significance of vulvovaginitis in children as a cause of endocervicitis. It has come to my attention in the last few years and I have been able to follow some of the cases in which I have known that there was a vulvovaginitis, and have found the typical halo about the external os characteristic of the so-called nulliparous endocervicitis seen in the virgin. I emphasize again the fact that this extension of infection through the cervix goes by the lymphatics, and as a result there is a perioophoritis and a perisalpingitis rather than a condition in the ovary itself. The ovary may be in bad company, but may escape involvement. I want to emphasize, furthermore, what Dr. Curtis has brought out, that in our experience we never have seen a case of focal infection in the cervix in which excision, radium or the cautery has cured arthritis or any of the remote symptoms that have been attributed to focal infection. Dr. Gellhorn has called to our attention something which, though many of us feel it does not exist perhaps as frequently as he would lead us to suppose, is nevertheless a definite lesion and a lesion that should be recognized and diagnosticated in order that it may be treated properly. Unfortunately, Dr. Ward did not bring out the fact that he dealt with large quantities of radium, quantities that are not available to those of us who have only 100 to 150 mg., and yet the results obtained by the use of small amounts such as Dr. Curtis, Dr. G. G. Ward and others have cited are important. A point of great value in the treatment by radium was emphasized in the discussion of Dr. Curtis when he demonstrated the position of the radium capsules and needles. I would add that it is necessary in these cases to place radium in the body of the uterus in order to produce atrophy of the body of the uterus as well as the destruction in the cervix, because otherwise a pyometra may occasionally result from radium treatment.

Another point is one which was brought out years ago by Dr. Gaylord, in his "implantation cancers" in rats. He found that as long as he fed his rats properly they could immunize themselves against cancer, provided he did not produce a blood loss, cause traumatism, or give the rat an anesthetic; but as soon as he drew blood drop by drop from the tail of that rat, traumatized the surrounding tissue or give an anesthetic, that rat's immunity was broken down. The points that stand out in this cancer discussion are, first, the low incidence of operable cases; second, that cancer can be cured by radium in a certain proportion of cases, and I believe in about 50 per cent of the primary cases, where it is located entirely within the confines of the cervix; third, that radium produces no primary mortality, and that no matter who the operator is there is a primary mortality of at least 10 per cent to every radical operation.

DR. GEORGE W. CRILE, Cleveland: I wish to emphasize the point made by Dr. Lynch, that the entire region, the lymph glands with the uterus, should be removed in a single block, just as in every other field of the body in which we attack cancer. At the present time methods of management as well as operative technic have progressed to such a point that not only is the operative mortality being lowered, but the postoperative morbidity is also being controlled, so that the patient should not pass through a period of greatly depressed vitality.

DR. CHANNING W. BARRETT, Chicago: The time to treat cancer is in the early stage. In the state of Texas, as in every other state, a great number of women will die with cancer of the uterus. We do not care what is done with those who would die in 1926 untreated; they will die anyway, and many of the treatments would cause them to die more quickly. But almost all of the patients who would die in 1930 can be cured. That means something. They could be cured if they were dealt with before cancer of the uterus develops. If a woman's pelvic organs are to be kept free from disease in her latter years, they must be cured of disease as she goes on. When she has reached the end of her child-bearing period, the organs should be examined to correct or avoid such conditions as endocervicitis, erosion, cystic degeneration, fibroid and scar tissue, which may lead to cancer. After seeing all of the different operations done on the cervix I feel that Dr. Newman's procedure is the neatest operation that has been given to the profession for amputation of the cervix. Dr. Newman has done more in his efforts to prevent cancer of the uterus than any one here can do in treating late or early cancer after it has started.

DR. CARL HENRY DAVIS, Milwaukee: When Dr. Dickinson introduced the simple cautery treatment of cervical conditions, he made a tremendous improvement over Hunter's earlier treatment with the cautery. In the treatment of cancer I wish to emphasize one point that has not been brought out in the discussion; namely, the value of blood transfusions. Dr. Ward demonstrated this in his paper last year in a very effective manner.

DR. CAREY CULBERTSON, Chicago: The physician should know what he is treating before the treatment is started; whether it is a simple erosion, one of these erosions with atypical cell proliferation, a borderline carcinoma, or carcinoma. For the last three years I have been making an intensive study of the uterus. It has been largely a study of the function of the gland cell, but there have been several by-products. One of these is the changes in the mitrochondria of the epithelial cell. I believe that these show a disarrangement when the cell becomes cancerous, and we are now studying erosions with particular reference to this disarrangement of the mitrochondria of the epithelial cell in such cases as show proliferation of any sort. The important thing is that histologic study of these lesions is made before treatment is instituted. It is evident that this should vary according to the particular phase of cellular proliferation, and that it is a mistake to treat all erosions by one method. This has been brought out in that portion of my paper which was not read.

DR. C. JEFF MILLER, New Orleans: In reply to Dr. Curtis' inquiry as to focal infection, I think we should be very careful in accepting unreservedly the theory that the cervix is a frequent source of systemic infection. I purposely emphasized in my paper the lymphatic system of the uterus and the broad ligaments, because I wished to stress the point that these lymphatic channels offer an easy mode of access for an ascending infection which may involve the ovaries and the tubes; this is particularly true of such conditions as perisalpingitis and the various disturbances in the function of the ovary which in turn disturb the cycle of menstruation. More often than we have believed in the past, these conditions are due to an ascending lymphangitis. Moench has done valuable work in correlating pathologic conditions of the cervix with the various systemic infections; but I agree with Dr. Curtis and Dr. Polak that, in spite of her work, we still have not sufficient clinical evidence to accept the theory unreservedly.

DR. HARVEY B. MATTHEWS, Brooklyn: We are carrying out some bacteriologic studies in which we believe we shall be able to show that the cervix is a focus of infection. I do not see any reason why it should not be a source any more than the apical abscess of teeth or infected tonsils. Up to the present we have been able to recover only *Staphylococcus aureus* in one case. We have studied five specimens taken from inside the abdominal cavity following hysterectomy. In the second place, I should like to emphasize the points Dr. Barrett brought out. This is the age of prophylactic medicine (preventive medicine), and the time to prevent cancer is to remove the pathologic conditions; then it will not be necessary to treat cancer. This is also the age of periodic examinations, and every woman should have periodic vaginal examinations just the same as any other kind of examination, particularly after the child-bearing age. No woman has a right to reach the age of 45 without having a complete general examination, including a pelvic examination, and no examination of a woman is complete without vaginal examination. By this means we shall be able to make a diagnosis of these cervical conditions, and carry out the proper treatment; thus we shall be able to prevent cancer of the cervix and, therefore, we shall not have to treat it.

DR. B. C. CORBUS, Chicago: Diathermy in the treatment of gonorrheal endocervicitis is new, and several failures have been attributed to its use. One must bear in mind that to be successful in the use of diathermy we must have a machine that produces the proper amount of current and the proper number of oscillations. The diathermy current must have around 800,000 oscillations per second, and a wave length of approximately 375 meters. If we do not have a machine that produces this kind of current, contractions and painful sensations occur during the application of the diathermy treatment. Another factor is the length of time. The length of time is in proportion to the amount of heat used. If the time is increased, the temperature is lowered. Dr. Curtis has ably shown us that the endocervical canal is the most persistent focus for harboring the gonococcus. The endocervical canal measures approximately 4 to 4.5 cm. in length. Our cervical thermophore measures 4 cm. in length, and can be pushed in the external os to cover the whole of the endocervical canal.

DR. GEORGE GELLHORN, St. Louis: Dr. Curtis is prevented, unfortunately, from speaking a second time and correcting an unintentional misstatement, but I will say in his behalf that he, too, inserts radium not only in the cervix but also in the uterine cavity. With regard to Dr. Matthews' paper, I would add a technical suggestion. The Sturmdorf and similar plastic operations on the cervix are very bloody, and for that reason not always simple. If, however, the operation is performed under local anesthesia, it is rendered practically bloodless, and therefore easier. I should like to ask both Dr. Ward and Dr. Lynch what their method of treatment is in the most advanced cases of cancer when only a very thin shell of weakened tissue separates the bladder and rectum from the crater in the vagina, and when even a small quantity of radium would invariably lead to injury of the thin septum with subsequent formation of a fistula. As far as my own subject is concerned, I am very grateful to Dr. Polak for his appreciation. It does not make so much difference whether one believes syphilis is frequent or not—the main thing is to bear the possibility of syphilis in mind. It is safe to say that then many local treatments will be found superfluous, and that many

a woman will be spared an unnecessary operation for a supposed cancer which, in reality, is a gumma of the cervix.

DR. GRANT E. WARD, Baltimore: Answering Dr. Gellhorn's question as to the procedure to be followed in cases having a very thin vesicovaginal or rectovaginal septum: If the disease is encroaching closely on the bladder or the rectum, it is much better to use outside radiation except in cases in which it is deemed possible to eradicate the disease entirely. In such an instance, the application is placed directly against the growth, taking the chance of causing a vesicovaginal fistula. I mention this because I recall one in which there was an extensive vesicovaginal fistula with eradication of all the disease; the patient remained well and comfortable for several years, except for the inconvenience of the fistula. If the disease is very extensive laterally, one should rely on external radiation.

DR. FRANK W. LYNCH, San Francisco: I feel that this symposium really is a brief for good obstetrics. It emphasizes the value of preventive medicine. It shows that the best method of curing cancer is to cure it before it really is cancer. When the medical world learns to follow up the woman for one year after the birth of her baby, it will abolish at least 50 per cent of gynecologic work. When a woman is unfortunate enough to have a cervical cancer, it may be impossible for either operation or radium to cure. Answering Dr. Gellhorn's question, I have found nothing which has equaled acetone in clearing up an ulcerous cervix in the latest stages when radium cannot be used. I am also of the opinion that the inoperable types of cancer which are cured after radium treatment are not cured solely by the changes induced by the radium: the natural defenses of the body enter to an astonishing degree. No student of the cancer question can fail to be impressed with the fact that while radium cures from 5 to 15 per cent of inoperable cancers, it has not yet cured more than 50 per cent of the operable group which are the more favorable type of cases. From this, we have a perfect right to argue that there must be natural defenses arising in the human body because of the presence of the cancer, and that these have not yet arisen in the early cases. Cleaning up the ulcer in the late cases of cancer contributes tremendously to the cure and permits the action of bodily defenses not inhibited by the infection arising from the infected carcinomatous ulcer. No one single contribution, therefore, equals in my judgment that of our chairman a year ago in his plea for increasing the body defenses by frequent transfusions of blood in all carcinomatous cases. Whether the extensive operation is justifiable or not depends entirely on the results of the individual surgeon. If, however, the radical operation causes trauma or fistulas, so that the patient, while living, has not the ordinary pleasures of the human being, it is absolutely unjustifiable. There is abundant proof at the present time that the ordinary panhysterectomy has no place in the treatment of cancers, and that any one treating all of his cases by radiation plus transfusions of blood will do more for a cure than by ordinary surgery.

The Small Hospital.—In general terms, it may be said that the small hospital should be as modern and scientific as a large one and that inasmuch as each community has it own particular problems, ideas, and ideals the hospital will have to be adapted to and made to meet these particular demands scientifically, sympathetically, and specifically. It goes without saying that the house and hotel side of the small hospital should be as clean, comfortable, and homelike as funds will permit, and there are volumes in this one word "funds" if we could have time to discuss it. The hospital side should include adequate operating, roentgen-ray, laboratory, physiotherapy, records, admission and office facilities. I mean by adequate just a little bit ahead of actual demand. That means growth. In large hospitals we have a professional staff, supervisors, technicians, full and part-time doctors, and trained clerks for each of these departments. All of these are not available; in fact, few of them are usually available in small hospitals chiefly on account of the cost. The individual in the small hospital will have to be exceedingly versatile.—*California & Western Med.* **25**:649 (Nov.) 1926.

MALARIA TREATMENT OF CENTRAL NERVOUS SYSTEM SYPHILIS

PRELMINARY OBSERVATIONS *

J. R. DRIVER, M.D.; JOHN A. GAMMEL, M.D.
AND
L. J. KARNOSH, M.D.
CLEVELAND

Increasing and uniformly encouraging results, reported in the literature, from the use of malaria and other fever-producing methods in the treatment of syphilis of the central nervous system have led us to try the inoculation of a series of patients with the organism of benign tertian malaria. With few exceptions, the reports so far published must be regarded as essentially preliminary and necessarily of questionable statistical value, since a period of observation of several years is required before final deductions can safely be made. The only justification for recording our own observations at this time is that they may be compared with similar reports of other investigators, and that certain points may be recorded which in our experience we have learned to be of practical value in the management of this type of treatment.

Our modern methods of treatment, in central nervous system syphilis, by the use of the preparations of mercury, bismuth, arsenic and the iodides, in various combinations, which time and experience have established to be of the most value, have met with fair success in the hands of many syphilologists. However, experience and a study of the literature impress one with the fact that the results from all methods are far from satisfactory and leave much to be desired. It seems not unnatural, then, that the further search for something better should have resulted in the employment of other methods in combination with antisyphilitic therapy of proved value.

HISTORICAL REVIEW OF THE LITERATURE

The value of "fever treatment" originated from quite old observations that cases of mentally diseased patients improved following intercurrent infectious diseases accompanied by high fever. Remissions occurred which in many instances simulated a cure. Hippocrates and Galen knew that diseases with fever may act favorably on "psychoses" and, during the past century, numerous reports are found in the literature of psychoses favorably influenced by typhoid, typhus, malaria, cholera, variola, erysipelas, scarlet fever, measles, pneumonia and suppurative processes. In 1848, Koster [1] had studied the influence of malaria on mental diseases, and at that time the erection of an insane asylum in a place that was constantly exposed to intermittent fever was seriously considered. Nasse,[2] in 1864, noted the favorable influence of malaria on mental diseases and pointed out the especially striking results in dementia paralytica.

The real basis, however, for the evolution of "fever therapy" was laid by Wagner-Jauregg [3] in 1887 in his paper giving a review of the literature and numerous

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* Read before the Section on Dermatology and Syphilology at the Seventy-Seventh Annual Session of the American Medical Association, Dallas, Texas, April, 1926.

* From the Departments of Dermatology and Syphilology and of Neurology of the Cleveland City Hospital, Lakeside Hospital and the Western Reserve University School of Medicine.

1. Koster: Quomodo in insaniam valeat febris intermittens, Dissert. inaug., Bonnae, 1848; quoted by Schulze: Deutsche med. Wchnschr. **51**: 1856 (Nov. 6) 1925.
2. Nasse, W., quoted by Schulze.
3. Wagner, Julius: Ueber die Einwirkung fieberhafter Erkrankungen auf Psychosen, Jahrb. f. Psychiat. u. Neurol. **7**: 94, 1887.

personal observations. Thus, before the time that general paralysis was known to be due to syphilis, he wrote, "Would it be justified if we should purposely introduce into the therapy of psychosis the remedy that nature possesses in the production of feverish diseases, by using their inoculation as a therapeutic agent?" He considered at that time the use of malaria, erysipelas and recurrent fever, and advocated especially malaria because it was the most easily controlled. Numerous difficulties at this time made it impossible for him to use such radical measures, and he attempted only once to inoculate a patient with erysipelas, but failed to reproduce the disease. Since he felt he could not use the introduction of living organisms into the body, he employed the derivatives of bacteria in his therapeutic attempts, using first Koch's old tuberculin. During the following twenty years, he and his pupils treated numerous series of cases of chronic psychosis and general paralysis with courses of tuberculin, and always observed that these cases showed much higher percentages of remissions than the controls. After the syphilitic nature of general paralysis was established he combined mercury and the iodides with the tuberculin treatment, and reported that more than 50 per cent of the cases were improved and full remissions were not infrequently seen. Later he used Besredka's polyvalent typhoid vaccine intravenously in increasing doses, with similarly favorable results. Wagner-Jauregg [4] felt, however, that a true febrile infection would give better results, and in the summer of 1917 he inoculated nine patients having general paralysis with benign tertian malaria. Six cases out of the nine were so favorably influenced that four showed complete remissions enabling them to resume their former occupations.

Gerstmann [5] states that of these four patients one died after one year from pneumonia and empyema. Three are still actively at work after nearly seven and one-half years. The results of this experiment influenced Wagner-Jauregg to adopt the malaria treatment in all cases of general paralysis, and in the Vienna clinic so far more than 1,000 patients with general paralysis have been treated. Gerstmann,[5] in a review of the first 400 cases, states that 33 per cent have a full remission and have been under observation from two to seven and one-half years following the treatment. He concludes that the malaria treatment improves especially the paretic disturbances of speech and writing, the paralytic attacks and ataxia. Disturbances of the pupils in his experience were rarely influenced.

Weygandt,[6] from a study of 300 cases of general paralysis, concludes that the malaria treatment is of all methods the most promising.

Reese and Peter [7] report complete remissions in 70.6 per cent of a series of seventy-five patients treated in Nonne's clinic and examined from one and one-half to two years after malaria treatment. This high percentage is probably explained by the fact that in this clinic comparatively early cases are seen.

Nonne,[8] in a review of his 450 general paralytic patients treated by malaria, concludes that 30 per cent of cures has convinced him that this is the method of choice.

Bunker and Kirby,[9] reporting their results in thirty-nine cases, state that eighteen patients were markedly improved and fourteen of them returned to their former occupations. The method, in their opinion, is unquestionably of value.

Eldridge and his associates,[10] after treating fifty-five unselected cases of general paralysis, report that eighteen patients were improved, twenty-one were unimproved, and sixteen deteriorated further, nine dying. They believe their results warrant continued use of the method.

O'Leary, Goeckerman and Parker,[11] in twenty-four cases, obtained six full remissions and nine incomplete remissions; seven patients were unimproved and two died. These encouraging results they believed warranted an exhaustive trial of the method.

Summary of Cases of General Paralysis Treated with Malaria Recorded in the Literature to April 1, 1926

Author	Cases	Greatly Improved (Full Remissions)	Moderately Improved (Incomplete Remissions)	Unimproved (Condition Worse or Died)
Gerstmann* (Vienna)	400	132	57	211
Weygandt, et al.* (Hamburg)	175	54	56	65
Welchbrodt* (Frankfort)	4	2	..	2
Weeber* (Austria)	50	14	16	20
Jossmann and Steenaerts* (Berlin)	100	21	28	51
Plehn* (Berlin)	40	13	13	14
Mayer* (Innsbruck, Austria)	40	2	27	11
Herrmann* (Prague)	40	8	11	21
Graf* (Leipzig)	13	..	9	4
Bening* (Bremen)	9	5	2	2
Gans* (Holland)	17	5	5	7
Bowman* (Holland)	40	10	15	15
Delgado* (Peru)	5	4	..	1
Modena and de Paoli* (Italy)	10	3	2	5
Mingazzini* (Italy)	20	8	5	7
Agugila and d'Abundo* (Italy)	4	2	..	2
Askgaard* (Denmark)	37	12	6	19
Grant and Silberston* (Wittingham, England)	50	7	33	10
Worster, et al.* (London)	14	3	8	3
McAllister* (London)	12	2	4	6
McBride and Templeton* (London)	18	3	9	6
Yorke and Macfie* (Liverpool)	84	23	27	34
Janzen and Hutter* (Holland)	27	1	8	18
Herzig* (Am Steinhof)	100	15	12	73
Nonne (Hamburg)	322	96	129 ?	97 ?
Meyer (Königsberg)	135	36	35	64
Fleck (Munich)	55	16	3	36
Schulze (Dalldorf)	215	78	29	108
Nyirö et al. (Hungary)	30	7	12	11
Wizel and Prussak (Poland)	22	21	..	1
Marie, A. (France)	100	5	15	80
Donner (Finland)	30	9	9	12
Bunker and Kirby (New York)	39	18	4	17
Eldridge (Washington)	55	..	18	37
O'Leary, et al. (Mayo Clinic)	24	6	9	9
Total	2,336	641 (27.5%)	616 (26.5%)	1,079 (46%)

* Statistics taken from Gertmann's monograph.

To review further in detail the observations of the many investigators who have published results would obviously be beyond the scope of the present communication. We have therefore, from a review of the literature published prior to April 1, 1926, summarized, as nearly as possible, in the accompanying table the results of malaria treatment in general paralysis.

It is to be noted that of 2,336 cases treated in many parts of the world, full remissions were obtained in 641, or 27.5 per cent, and incomplete remissions in 616, or 26.5 per cent; there were 1,079, or 46 per cent, unimproved. A total of 54 per cent improved surpasses

4. Wagner von Jauregg, Julius: Ueber die Einwirkung der Malaria auf die progressive Paralyse, Psychiat. neurol. Wchnschr. **20**: 132, 251, 1918-1919.

5. Gerstmann, J.: Die Malariabehandlung der progressiven Paralyse, Vienna, Julius Springer, 1925.

6. Weygandt, W.: Ueber Malaria-Impfbehandlung der Paralyse, Klin. Wchnschr. Nov. 19, 1923, p. 2164.

7. Reese, H., and Peter, K.: Die Einwirkung der Malaria tertiana auf die progressive Paralyse, Med. Klin. **20**: 372 (March 23) 1924; **20**: 410 (March 30) 1924.

8. Nonne, M.: Meine Erfahrungen über die Malariabehandlung der Paralyse, Med. Klin. **21**: 1829 (Dec. 4) 1925.

9. Bunker, H. A., and Kirby, G. H.: Treatment of General Paresis by Inoculation with Malaria, J. A. M. A. **84**: 563 (Feb. 21) 1925.

10. Eldridge, W. W.: Treatment of Paresis, J. A. M. A. **84**: 1097 (April 11) 1925.

11. O'Leary, P. A.; Goeckerman, W. H., and Parker, S. T.: Treatment of Neurosyphilis by Malaria, Arch. Dermat. & Syph. **13**: 301 (March) 1926.

by far the results obtainable by any former method of treatment. The compilation of such a table necessarily presents certain difficulties, for in some instances authors state only the number of cases that were improved, and the number of these in which full remissions occurred is not always mentioned. It was our practice to place all such figures in the column of "moderately improved," it being our purpose to arrive at, as nearly as possible, a conservative evaluation. Obviously, the total number of cases treated, as shown in the table, represents only those in which conclusions have been recorded and is not an index of the total number treated by this method.

EFFECT OF MALARIA THERAPY IN TABES AND CEREBROSPINAL SYPHILIS

But what shall be said about the use of this therapy in other types of central nervous system syphilis? If it is of value in general paralysis then why not in other types of spirochete infection of nervous tissue?

Nonne [8] has treated thirty-six tabetic patients with malaria, and he states that some were improved. Shooting pains or gastric crises were aggravated during the fever or appeared for the first time, but lasted only as long as the fever. There was little or no effect on the spinal fluid.

Bering,[12] in twenty-three completely observed cases of tabes, noted improvement in the reflexes, but ataxia and sensory disturbances in thirteen; in six there was almost complete cessation of bladder and rectal disturbances with ability to resume work, while in four instances no improvement of objective symptoms was noted. None of the cases became worse, and the general physical condition of all was benefited.

O'Leary, Goeckerman and Parker,[11] however, in their preliminary report state that in their experience malaria therapy had practically no effect on optic atrophy, gastric crises, persistent lightning pains with negative serologic observations, asymptomatic neurosyphilis and paresis sine paresi. They noted no change in the serologic conditions of the blood or spinal fluid.

Weygandt [13] believes that tabes is materially benefited by malaria.

EFFECT OF MALARIA THERAPY IN EARLY SYPHILIS

Kyrle [14] reasons that since good results are obtained in even advanced cases of central nervous system syphilis, by the use of malaria, even more striking results can be expected in the early stages of the disease. Two hundred and fifty patients with late syphilis were inoculated with good results, and he then treated a series of 205 cases of secondary syphilis, some showing central nervous system involvement and others none. The method consisted of giving a course of neo-arsphenamine (3 Gm. within four weeks) and then malaria inoculation, requiring about four weeks, followed by another course of neo-arsphenamine, the entire treatment requiring approximately three months. In this series there were three recurrences of the disease, all three patients refusing neo-arsphenamine after the malaria. Forty-five cases have been under observation from six to eighteen months. There have been no recurrences when the treatment was carried out as outlined. There was one instance of reinfection. There were two deaths from heart failure. Kyrle believes it is possible to cure practically all cases of secondary syphilis by this method.

Finger [15] also believes that syphilis in the secondary stage is curable by this short method. He states further that this combination of antisyphilitic and nonantisyphilitic therapy is indicated in all cases of syphilis of more than four years' duration showing a positive Wassermann reaction on the blood or spinal fluid. He states that the serologic reaction of the blood and spinal fluid in most cases becomes negative promptly, but in some instances only after three or four months. The imminent danger of tabes, general paralysis and cerebral syphilis is removed. In his estimation the method is superior to all others.

Pilcz and Mattauschek [16] and others have reported instances of the apparent value of accidental malaria infection, when contracted during the early stages of syphilis, in preventing the development of late central nervous system complications.

Kirschbaum and Kaltenbach,[17] however, report fourteen cases, in which malaria was contracted during the secondary stage of the disease, that later developed general paralysis. Two of these patients were later favorably influenced by the malaria therapy. No mention is made of the possible early recognition and treatment of the original malaria infection, thus offsetting any beneficial effect that might have been gained from it.

Of recent interest is the favorable influence on the course of syphilis of a severe dermatitis exfoliativa with high fever following the administration of the arsphenamines. A change from a persistently positive Wassermann reaction to a negative reaction has not infrequently been observed. Finger [15] states that arsphenamine dermatitis has usually, but not always, a favorable influence on the course of syphilis. We have noted the same phenomenon.

The favorable results from malaria induced Plaut and Steiner [18] in 1919 to use for the first time the organism of recurrent fever. They used *Spirochaeta duttoni* and hoped to produce an immunity against the related *Spirochaeta pallida,* just as it is possible to effect an immunity with one species of trypanosomes against another species. Weygandt, Muhlens and Kirschbaum [19] and others have also used recurrent fever in the treatment of neurosyphilis. Their results are about the same as with malaria, but according to Gerstmann [5] it has the disadvantage of the infection being sometimes prolonged over several months and it is impossible to check it at a chosen moment with arsphenamine, as we can malaria, at once, with quinine.

REPORT OF OBSERVATIONS

Our observations are based on the reactions of seventy-nine patients treated at Lakeside Hospital and the Cleveland City Hospital between May, 1925, and March 15, 1926. Each patient received the same asexual strain of *Plasmodium vivax* originating from a case of naturally acquired malaria in the medical service of the Cleveland City Hospital. Blood smears

12. Bering, F.: Impfmalaria zur Tabesbehandlung, München. med. Wchnschr. **72**: 1455 (Aug. 28) 1925.
13. Weygandt, W.: Ueber active Paralysetherapie, München. med. Wchnschr. **69**: 278 (Feb. 24) 1922.
14. Kyrle, J.: Die Malariabehandlung der Syphilis, Wien. klin. Wchnschr. **37**: 1105 (Oct. 23) 1924.
15. Finger, E.: Unspezifische Therapie der secundären und tertiären Syphilis, Wien. med. Wchnschr. **76**: 6 (Jan. 2) 1926.
16. Mattauschek, E., and Pilcz, A.: Zweite Mitteilung über 4,134 katamnetisch verfolgte Fälle von luetischer Infektion, Ztschr. f. d. ges. Neurol. u. Psychiat. **15**: 608, 1913.
17. Kirschbaum, W., and Kaltenbach, H.: Weitere Ergebnisse bei der Malariabehandlung der progressiven Paralyse, Ztschr. f. d. ges. Neurol. u. Psychiat. **84**: 297, 1923.
18. Plaut and Steiner: Die Recurrenstherapie der syphilitischen Nervenkrankheiten, Ztschr. f. d. ges. Neurol. u. Psychiat. **94**: 153, 1924.
19. Mühlens, P.; Weygandt, W., and Kirschbaum, W.: Die Behandlung der Paralyse mit Malaria und Rekurrensfieber, München. med. Wchnschr. **67**: 831 (July 16) 1920.

from the patients have been studied by Dr. R. N. Hoyt of the Department of Hygiene and Bacteriology of the Western Reserve University School of Medicine. His studies show the presence of two chronological crops of parasites in the smears taken from patients having daily paroxysms, ameboid schizonts and older segmenting forms with well formed merozoites being found in the same smear. Other interesting observations were the high percentage of red cells invaded as compared with cases infected by the mosquito, and the frequency of invasion of red cells by two or even three plasmodia. Further studies are being made of the parasitologic aspects of these cases.

With few exceptions, all were inoculated by the intravenous injection of from 2 to 8 cc. of blood taken from patients already under treatment. When more than one patient was to be inoculated, the blood was mixed in a sterile medicine glass containing a small amount of heparin solution, to prevent clotting, thus necessitating only a single puncture of the donor. No attention was paid to ascertaining the blood group of the donor or recipient, and no ill effects from this practice were noted aside from an occasional slight rise in temperature a few hours later which was interpreted as a mild foreign protein reaction.

We followed the practice of others in not hesitating to use the blood of patients having general paralysis in inoculating cases of tabes or cerebrospinal syphilis, since no evidence of superinfection has been reported. Our experience corresponds with other investigators in that inoculations were just as successful whether the blood was taken at the time of a paroxysm or during the interval between the chills. In one instance, inoculation was successful when the donor had received by mouth two doses of quinine sulphate of 5 grains (0.3 Gm.) each, fourteen and two hours, respectively, before the blood was taken.

There were six failures to inoculate. In one instance a repeated inoculation two weeks later resulted in success.

The incubation period was from three to seven days, with an average of five days in the intravenously inoculated patients. In two instances, fourteen and sixteen days, respectively, elapsed before typical paroxysms occurred. Both of these patients became quite ill, and following the second and third paroxysms signs of prostration and collapse necessitated the termination of the infection by the intravenous administration of quinine.

In a few patients inoculated intramuscularly by the injection of from 5 to 10 cc. of malaria blood, the period of incubation varied from ten to eighteen days. This method was of advantage only when, because of a lack of suitable patients, it was necessary to prolong the malaria infection in order to have donors always available. The intravenous method has the advantage of shortening the period of hospitalization, the incubation period is more uniform, and the chances of successful inoculation are greater.

COURSE OF MALARIA

During the incubation period in about one third of our cases we noted a prodromal rise in temperature for from one to three days before true paroxysms started. The maximum temperature attained during the chills ranged from 39 to 41.6 C. (102.2 to 106.9 F.), with an average of 40.4 C. (104.7 F.).

If there were no contraindications necessitating earlier termination, it was our practice to allow the patient to experience from twelve to sixteen chills. Termination was effected by the oral administration of quinine sulphate in 10 grain (0.64 Gm.) doses three times a day for three days, followed by 5 grain (0.32 Gm.) doses three times a day for four more days. Quinine was not continued unless examination of smears showed the presence of parasites. We have had no recurrences of the malaria in any of our cases to date. In patients who showed serious complications, indicating a sudden interruption of their malarial infection, we gave intravenously from 2 to 7 grains (0.13 to 0.45 Gm.) of quinine dihydrochloride dissolved in physiologic sodium chloride solution. In spite of very slow injection of the drug, shocklike reactions were sometimes seen, and we feel that for this reason its use is indicated only in emergencies.

COMPLICATIONS

Serious complications are not common, but occasionally they are of such a nature that only prompt arrest of the treatment will prevent disastrous results. It is for this reason that we believe that this type of therapy should be undertaken only in hospitals or sanatoriums fully equipped to meet such emergencies, and certainly a physician thoroughly familiar with the care of such patients should be available both day and night. If, in addition, the cases are carefully selected, avoiding the far advanced general paralytic patients, the aged, and those patients having serious complications such as tuberculosis, marked anemia, aortitis, diabetes, or nephritis, a mortality rate of 2 per cent or less in a large series of cases would, in our opinion, be possible. Kyrle [14] had only two deaths in his series of 205 cases of early syphilis treated with malaria.

Herpes labialis was commonly seen and was of minor importance. Routine examination of the urine occasionally showed a small amount of albumin, and sometimes a few casts which cleared up promptly following the treatment. Secondary anemia was present in all our cases, the average destruction of red cells being about 25 per cent; a 50 per cent reduction was occasionally seen without serious results, but in one case a rapid drop to 1,250,000 red cells, with hemoglobin of 30 per cent following the fourth chill, was quickly followed by collapse of the patient, and only the immediate intravenous administration of quinine and a blood transfusion saved the patient's life. Hemoglobin was reduced in all cases corresponding to the degree of destruction of the red blood cells. Leukopenia was to be expected, and was found in most cases, while a leukocytosis we believed warranted a search for complications. In nearly all the blood returned to normal in a few weeks after the treatment was stopped.

Mild icterus was encountered frequently, but it is not serious unless the icteric index reaches 50 or over.

A moderate increase in blood urea was found in practically all the cases examined, and frequent estimations as advocated by O'Leary, Goeckerman and Parker in those cases showing toxicity was found to be a very valuable index of the severity of the infection. In seven cases in which the urea increased to 70 mg. or higher per hundred cubic centimeters of blood, the treatment was interrupted. In all these patients there was clinical evidence of severe toxemia, such as profuse diarrhea, dehydration, marked progressive anemia, cessation of chills, stupor and marked prostration. All recovered following the administration of quinine, excepting one patient with general paralysis who before death had a urea increase of 300 mg. High

blood urea was usually not associated with urinary observations indicating kidney disease. That high blood urea may be due to accelerated tissue catabolism, and thus furnish an index of the degree of body protein destruction, as suggested by O'Leary, Goeckerman and Parker seems most plausible.

A moderate fall in blood pressure was noted in all the patients and frequent estimations as recommended by Schulze [20] we found to be one of the most valuable indications of the patients' condition. A systolic pressure of 100 mm. between chills necessitates great caution, and a reading below 90 mm. usually is followed by signs of collapse.

Headache was a fairly common complication, especially during the prodromal rise in temperature, but was unimportant. One patient developed a severe furunculosis near the end of the course of malaria. Another patient developed a fatal cellulitis of the arm one week after malaria.

In all patients who were troubled with gastric crises or shooting pains these symptoms were greatly aggravated during the chills but subsided during the intervals.

In patients who previously had had bladder disturbances, retention of urine necessitating catheterization was occasionally seen.

Delirium is not uncommon with the high temperature, and especially in patients with general paralysis required occasional restraining.

As noted by Gerstmann [6] and others, toxic psychoses are not an infrequent concomitant of the malaria infection. In several of our patients this state began shortly after the chills started and lasted until the infection was terminated. In only two, however, did it persist afterward for a time. We found it necessary to transfer one of them, a patient with tabes, who previously had had no mental symptoms, to the psychopathic ward.

In one case of general paralysis with hemiplegia, a fresh hemiplegia developed during a paroxysm.

Reduction in weight averaged from 3 to 18 pounds (1.4 to 8 Kg.) and is explained partially by the loss in appetite which to some degree was experienced by all the patients. Weight loss is recovered soon after the end of the course of malaria; and many instances of increase over the previous normal weight, in one case amounting to 25 pounds (11.3 Kg.), accompany the general improvement in those cases favorably influenced by the treatment.

INDICATIONS FOR INTERRUPTION OF MALARIA

Our experience so far would lead us to consider the following complications as indicating prompt interruption of the malaria infection: (*a*) urea increase to 70 mg. or over per hundred cubic centimeters of blood with or without other signs of renal disease; (*b*) systolic blood pressure below 95 mm. during the interval between chills; (*c*) severe icterus with index above 50; (*d*) red blood cell count below 2,000,000; (*e*) progressive rapid anemia associated with a spontaneous cessation of chills; (*f*) profuse diarrhea accompanied by vomiting and dehydration. Further indications noted in the literature are (*g*) marasmus; (*h*) hemorrhagic encephalitis; (*i*) hemorrhagic pachymenengitis; (*j*) sepsis; (*k*) pneumonia, and (*l*) rapid increase in the number of red cells invaded by malaria parasites.

The frequent use of certain laboratory tests, such as hemoglobin estimation, red, white and differential blood counts, urea estimation on the blood and urine, and examination of blood smears for sudden increase in the number of parasites, are valuable safeguards against serious complications, especially for the beginner. We believe, however, that careful clinical observations, the general appearance of the patient, frequent blood pressure readings and the information gained from carefully kept temperature and weight charts are of the greatest importance in forecasting complications, and as one becomes more experienced in this type of "fever therapy," laboratory tests become of value chiefly as symptoms arise which indicate their use.

ANTISYPHILITIC TREATMENT BEFORE AND AFTER MALARIA

With few exceptions (several patients with general paralysis) all patients had had a large amount of antisyphilitic treatment prior to malaria inoculation, and were chosen chiefly because of no further improvement. Nearly all the patients received follow-up treatment after malaria. Some received arsphenamine, some tryparsamide, and others were put on mercury rubs, mercury injections or bismuth injections, with potassium iodide by mouth. While our observations are not complete, we are inclined to believe, with many others, that the arsphenamines are of questionable value and may even do harm. In the cases most recently treated, we have resorted only to therapy by mercury or bismuth with potassium iodide as recommended by Nonne.

RESULTS

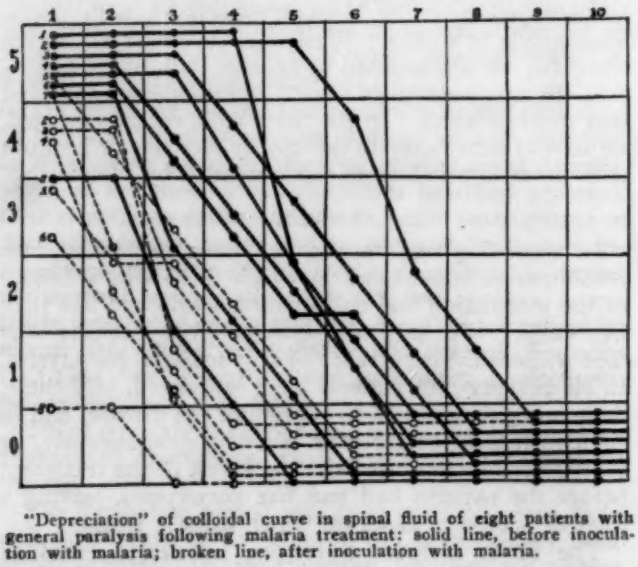
In recording our results, we have not taken into consideration those cases in which there was a failure of the inoculation and those patients who had less than five chills. We have also excepted two patients who died without the occurrence of true malarial paroxysms. In all, seventy-nine patients were inoculated. Of these, there were six failures to reproduce the disease, and in eight instances the infection aborted spontaneously, or complications arose necessitating arrest of the treatment before the patients had had five paroxysms, leaving a total of sixty-five cases on which to base results.

The series includes thirty-one unselected cases of general paralysis, two of juvenile paresis, thirteen of taboparalysis, twelve of tabes dorsalis and seven of cerebrospinal syphilis.

In the group of patients with general paralysis, eight obtained complete remissions, the improvement being so pronounced that there was absence of the speech defect, no evidence of delusional upset, and no amnesia or disorientation; the general conduct of the patients was normal and all have been discharged, under supervision, to return to work. In eight moderately improved cases, incomplete remissions were evidenced by freedom from irritability and amnesia; speech and tremor defects were still present to some degree in all, and the general conduct was fairly good. In four cases slightly improved there was mild recovery from the most disagreeable features of the disease, and the patients became more easily manageable. They retained their amnesia, were confused mentally, and the speech and tremor defects were still present. In seven cases unimproved there was no demonstrable change in any form. Our observations agree with those of Nonne in that the neurologic phases, such as fixed and irregular pupils, faciolingual tremor, and pathologic reflexes were very resistant to this form of treatment. Improvement is most likely in the mental phases, and to a lesser degree in spinal fluid changes, although improvement here in the colloidal gold curve was fairly constant in all

20. Schulze: Die Malariabehandlung der Paralyse, Deutsche med. Wchnschr. 51: 1856 (Nov. 6) 1925.

patients benefited by malaria, as indicated in the chart. There were four deaths in this group. All were far advanced and markedly deteriorated before treatment was started. Three patients were considered poor risks and died with bronchopneumonia. In two of these, the typical malaria temperature was replaced by a characteristic pneumonia fever, the temperature remaining constantly at a high level until death. In the other bronchopneumonia death, the patient developed a pneumonia type of fever on the third day after intravenous inoculation with malaria and died on the eleventh day, never having had a true malarial paroxysm. One patient, originally considered a fair risk, following the twelfth malarial paroxysm developed from an abrasion a cellulitis of the right arm, and died six days later from septicemia. In no instance could death be ascribed to malaria alone; still, there is no question but that it did predispose patients to serious secondary infections which could not be combated by those already in a poor physical condition.



"Depreciation" of colloidal curve in spinal fluid of eight patients with general paralysis following malaria treatment: solid line, before inoculation with malaria; broken line, after inoculation with malaria.

In thirteen cases of taboparalysis three obtained pronounced improvement, as shown by complete freedom from mental symptoms and tabetic pains, while the neurologic manifestations were practically unchanged. Three were moderately improved, three were slightly improved, while four were unchanged. One patient, a young man, whom we had considered a good risk, died on the eleventh day following an intravenous inoculation. On the third day his temperature rose to 39.5 C. (103 F.) and remained between 38.5 C. (101.3 F.) and 42 C. (107.6 F.) without any true paroxysms being manifested, until death. On the tenth day the patient became delirious and maniacal, and quinine was administered. Blood urea at this time was 47 mg. per hundred cubic centimeters; hemoglobin, 80 per cent, and white blood cells, 20,600. Examination revealed no evidence of pneumonia or kidney disease. Death followed the next day from respiratory failure. Necropsy could not be secured. Blood smears taken a few hours before quinine administration have been examined by Dr. D. de Rivas of Philadelphia, who reports that they showed a single tertian infection of average degree and not of sufficient intensity to be the cause of death in itself, except as a complication.

Of two patients with juvenile paresis one was slightly improved mentally, the Wassermann reaction on the blood and spinal fluid six months after treatment was unchanged, as was also the gold chloride curve, while the cell count which before treatment was 105 returned to normal and the globulin test became negative; the other case remained unchanged.

Of twelve patients with tabes dorsalis, three have been relieved completely from persistent gastric crises and lightning pains for a period of from four to six months to date. In four cases, pains have been markedly decreased in intensity; in two instances slight benefit was obtained, while in two no change could be noted. So far we have noted no material improvement in blood or spinal fluid serologic reactions in tabetic patients. Objective symptoms were uninfluenced, but physical improvement was noted in the majority.

There were seven cases of cerebrospinal syphilis. Five showed no subjective symptoms, but in all large amounts of intensive antisyphilitic treatment was given without influence on the serologic reactions of the spinal fluid. Before malaria all had a strongly positive Wassermann reaction on the spinal fluid, the gold chloride curve was paretic in type in four, and luetic in one. Three showed moderate increase in the cell count. Globulin was positive in all.

Following the malaria, examination of the spinal fluid thus far shows practically no influence of the treatment on the Wassermann reaction. The cell count is normal in all and the globulin not increased in any.

In two of the patients who showed gold chloride curves of the paretic type, a change to the luetic type was observed after sixteen and six weeks, respectively, and they also manifested a marked general physical improvement associated with an increase in weight of 25 and 10 pounds (8.2 and 4.5 Kg.), respectively.

We are unable to pass judgment on two cases of asymptomatic cerebrospinal syphilis that we have not been able to examine following the treatment.

SUMMARY

Malaria treatment was employed in seventy-nine cases of syphilis of the central nervous system. If it is permitted to judge the results in cases in which the treatment has been completed for a period of from one to nine months, it is found that at least the earily effect of this therapy has resulted in marked improvement in many cases that were no longer helped by the vigorous use of the usual methods of modern antisyphilitic therapeusis.

It will be noted that in the group of general paralytic patients, complete remissions, with improvement sufficiently great to permit them to return to work, was obtained in eight (26 per cent) of the cases; the same number were definitely improved; four were slightly improved; seven were uninfluenced, and four died. This compares favorably with the average results of others. The effect was similar in the group of thirteen cases of taboparalysis. Two cases of juvenile paresis practically uninfluenced corresponds to the observations of other investigators. The effect on cases of tabes dorsalis, if our group of twelve cases is not too small to be of value, was most encouraging. The complete disappearance of persistent gastric crises and lightning pains in three patients lasting over a period now of from four to six months, with six others showing a definite decrease in frequency and severity of their pains, agrees with reports by Bering,[12] Weygandt[13] and others.

In cerebrospinal syphilis, five patients examined following treatment show two instances of marked general

physical improvement, associated with definite improvement in the serum reaction of the spinal fluid, as indicated by reduction to normal in cell count and globulin, and a depreciation of the gold chloride curve from the paretic to the luetic type. No change was noted in the Wassermann reaction on the blood or spinal fluid in any of the cases.

CONCLUSIONS

The results, as indicated by this preliminary report, are confirmatory of the work of similar character published by other investigators. We believe that further use of the method is warranted in selected cases of central nervous system syphilis that no longer show improvement by the usual methods of modern antisyphilitic treatment.

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ABSTRACT OF DISCUSSION

DR. WILLIAM H. D. GOECKERMAN, Rochester, Minn.: The results reported closely approximate ours. We have not used the malaria treatment extensively in the treatment of neurosyphilis, aside from general paralysis. We have had approximately a dozen such cases that showed as cardinal symptoms, optic atrophy and gastric crises. It is too early to say anything as to results. Among the patients with gastric crises, one has been entirely free from attacks for eight months and says that he feels like his usual self. We have treated approximately 100 general paralytic patients over a period of nearly two years. As our experience grows, our enthusiasm grows. I think we are not asserting too much in saying that the treatment of general paralysis with malaria is an actual discovery of the age. There is some danger in the malaria treatment of general paralysis, but we need not give this too great attention. I look on the situation largely as if we were dealing with a hopelessly malignant condition. We must take a chance. We have a reasonably large number of apparently hopeless cases and yet today many of these patients are back in their usual occupations.

DR. HANS H. REESE, Madison, Wis.: Our experience with the malaria treatment of general paralysis is based on personal investigation in 276 cases in Germany, and on a study of more than sixty institutional cases at the Wisconsin Psychiatric Institute. Our results are similar to those obtained by Dr. Goeckerman and by Dr. Driver. For institutional cases, malaria therapy is the only treatment to be used in suitable cases. It is wasting time and money to try any intravenous or intraspinal therapy in institutional cases of general paralysis. As soon as we have obtained mental improvement, we change the uninfluenced serologic reactions by weekly injections of tryparsamide. Our results with this combined treatment are very favorable and encourage us to recommend it earnestly.

DR. JAMES R. DRIVER, Cleveland: The particularly interesting thing about the malaria treatment of general paralysis is the uniform results that have been recorded in about 2,400 cases so treated. Full remissions occurred in 27.5 per cent.; incomplete remissions, but definite improvement, in 26.5 per cent, making a total of 54 per cent definitely improved. The results everywhere correspond in about the same proportion. If this method is valuable in general paralysis, one naturally wonders why it should not be of value in the earlier forms of central nervous system syphilis. Kyrle, reasoning in this way, treated 205 cases of secondary syphilis, some showing central nervous system involvement. In four weeks he gave 3 Gm. of neo-arsphenamine, followed with malaria, and then with another course of arsphenamine. The total course of treatment required about three months. He reports three recurrences. All these patients refused the follow-up course of arsphenamine. He believes that practically all cases of secondary syphilis are curable by this short method. This view is concurred in by Finger, who says, in addition, that all cases of syphilis of four years' duration with positive serologic reactions of blood or spinal fluid should be subjected to malaria therapy.

CHEMICAL ANALYSIS OF SWEAT

A FURTHER STUDY

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In a previous report[1] I attempted to establish normal values for the nitrogenous elements in sweat, comparing the amounts excreted through the skin in healthy persons with the amounts excreted by patients with senile eczema. At that time it was suggested that the excretion of chlorides, together with the nitrogenous elements in the perspiration, might have a bearing on the etiology of senile eczema. The present study was carried out to determine whether such a relationship exists.

Obviously, normal values for the nitrogenous elements of sweat had to be determined again, as in the previous communication the chlorides were not investigated. In addition, every specimen was analyzed for uric acid.

PROCEDURE

Method of Collection.—The same technic for the collection of sweat was employed as in the former experiments, one-fifth grain (0.01 Gm.) of pilocarpine being injected subcutaneously. An average of 300 cc. of fluid was taken by each patient during the sweat bath. I attempted to standardize the time element, sweating each patient one hour whenever this was possible. The highest amount of sweat obtained in one hour was 830 cc. In order to rule out the possibility that the rubber sheets might introduce an error in the nonprotein nitrogen determination, I placed 200 cc. of distilled nitrogen and salt-free water between the same sheets between which the patients were placed during the collection of the sweat, allowing this quantity to remain there for one hour. This fluid was then examined for nonprotein nitrogen, urea nitrogen, uric acid and salts, with negative results in all tests. The blood for nonprotein nitrogen and chloride determination was drawn immediately after the sweating. Urinalyses on all patients were negative.

Method of Analysis.—The same procedure for the nonprotein nitrogen, urea nitrogen and total solids was used in the present report as was employed in the former work. In determining uric acid I used Benedict's direct quantitative method as applied to blood with slight modification. Five cubic centimeter portions of the sweat as collected diluted with an equal volume of water or 10 cc. portions of the sweat filtrate were used. To these amounts 1 cc. of the arsenophosphotungstic acid reagent and 4 cc. of the sodium cyanide solution were added. These mixtures were boiled for three minutes in a water bath, and following cooling for three minutes the comparison was made with the standard. In most experiments a slight color was obtained in the unknown, but the color change was never deep enough to allow accurate comparison with the standard. However, by diluting the standard (the standard contained 0.1 mg. of uric acid) five times, I was able in a few instances to make a comparison with the unknown. This method gave readings of approximately 0.02 mg. of uric acid in 5 cc. of sweat or 0.4 mg. per hundred cubic centimeters of sweat, an almost insignificant amount. These figures must be regarded as

1. Barney, R. E.: Chemical Analysis of Sweat, J. A. M. A. 85: 1373-1375 (Oct. 31) 1925.

maximal and approximate only. The residue obtained on evaporating 5 cc. of sweat was examined for uric acid by the murexide test, with uniformly negative results. Control experiments made with solutions containing 0.06 mg. of uric acid demonstrated that this small amount could be easily detected by the murexide test. The evidence obtained by Benedict's quantitative procedure and the murexide test applied qualitatively indicates that the amount of uric acid present in the sweat as collected under our experimental conditions must be exceedingly small.

The amount of chlorides in the perspiration was determined by precipitating the chloride by means of silver nitrate in the presence of nitric acid and then titrating the excess silver with the standard sulphocyanate solution, ferric ammonium sulphate being used as an indicator. Five cubic centimeter portions of the sweat as collected were used. Frequent control experiments with the protein free filtrate gave the same amounts of chloride as when the sweat was used for chloride analysis without previous deproteinization. For this reason I felt justified in using the method outlined above.

RESULTS OF INVESTIGATION

In all, seventeen normal sweats were examined. The results of these experiments are given in detail in table 1. The blood of every patient was examined for nonprotein nitrogen and chlorides, and the results were found to be well within normal limits. Throughout this work the amounts of nonprotein nitrogen and urea nitrogen per hundred cubic centimeters of sweat in the normal cases were found to be lower than the results in the previous series investigated. This fact I attribute in part to improvements in technic. For example, in the series of fourteen cases analyzed in the former report, the average for the nonprotein nitrogen per hundred cubic centimeters was 76.4 mg., and for the urea nitrogen, 34.4 mg. per hundred cubic centimeters, while in the seventeen cases here reported the average for the nonprotein nitrogen per hundred cubic centimeters was 41.7 mg., and for the urea nitrogen per hundred cubic centimeters, 25.9 mg. However, in one of the fourteen cases examined in the previous report, only 30 cc. of sweat was obtained, which contained 200 mg. of nonprotein nitrogen per hundred cubic centimeters and 63 mg. of urea nitrogen per hundred cubic centimeters. If the nonprotein nitrogen and urea nitrogen per hundred cubic centimeters in the former group are computed without these high values, we find the average for the other thirteen cases to be 66.9 mg. of nonprotein nitrogen per hundred cubic centimeters, and 33.3 mg. urea nitrogen per hundred cubic centimeters. These results compare more favorably with the amounts per hundred cubic centimeters of nonprotein nitrogen and urea nitrogen obtained in this series of seventeen cases. The amounts of sweat obtained varied from 80 to 830 cc., and in no instance was there any difficulty in obtaining enough sweat for the analysis. The total solids per hundred cubic centimeters are fairly uniform. The nonprotein nitrogen percentage values vary widely and are not proportional to the amounts of sweat collected. In the first case, in which only 80 cc. was obtained, the amount of nonprotein nitrogen per hundred cubic centimeters is 63.8 mg. In the last case, 830 cc. was collected, an amount ten times as great, but the nonprotein nitrogen per hundred cubic centimeters is 30 mg., about half the amount in the first case.

It is because of this variation in the amounts per hundred cubic centimeters that I believe the amounts excreted per hour are of more significance.

The percentage of nonprotein nitrogen and urea nitrogen in the total solids give us little information. The urea nitrogen percentage per hour varies as the nonprotein nitrogen. The percentages of urea nitro-

TABLE 1.—*Normal Sweat*

Number	Blood Chlorides per 100 Cc., Gm.	Blood Nonprotein Nitrogen per 100 Cc., Mg.	Time, Hour	Amount Sweat, Cc.	Total Solids per 100 Cc., Gm.	Nonprotein Nitrogen per 100 Cc., Mg.	Nonprotein Nitrogen in Total Solids, per Cent	Nonprotein Nitrogen per Hour, Mg.	Urea Nitrogen per 100 Cc., Mg.	Urea Nitrogen in Total Solids, per Cent	Urea Nitrogen per Hour, Mg.	Urea Nitrogen in Nonprotein Nitrogen, per Cent	Chlorides as NaCl per 100 Cc., Mg.	Chlorides as NaCl per Hour, Gm.	Chlorides in Total Solids, per Cent
1	0.498	30.1	1	80	0.682	63.8	9.35	51.0	33.3	4.74	26.6	51.94	0.265	0.212	38.9
2	0.462	36.3	1	570	0.740	30.8	4.14	175.3	21.0	2.83	119.5	68.14	0.469	2.670	63.3
3	0.495	40.5	1	500	0.506	27.0	4.53	135.1	16.8	2.82	84.2	62.32	0.302	1.510	59.7
4	0.578	28.3	1	150	0.644	52.6	8.79	79.0	33.5	5.97	57.7	73.05	0.188	0.282	29.2
5	0.487	35.7	1	290	0.514	38.7	7.53	112.3	26.3	5.11	76.3	67.70	0.221	0.641	43.0
6	0.474	31.6	1	180	0.672	46.9	6.97	84.4	25.1	3.74	45.3	53.63	0.253	0.455	35.6
7	0.482	25.0	1	270	0.520	40.0	7.69	108.0	26.3	5.06	71.0	65.88	0.207	0.559	39.8
8	0.470	32.0	1	170	0.772	40.0	5.18	68.0	25.0	3.24	35.5	62.50	0.386	0.656	50.0
9	0.462	32.0	1	325	0.737	42.3	5.73	137.3	23.8	3.23	77.4	56.35	0.366	1.189	49.7
10	0.479	23.0	1	480	0.603	34.1	5.65	163.7	18.4	3.05	88.3	53.94	0.231	1.110	38.3
11	0.462	27.0	1	375	0.598	38.7	6.47	145.2	25.9	4.32	97.0	66.80	0.215	0.917	40.9
12	0.446	30.0	1	300	0.890	38.1	4.28	114.3	24.6	2.76	73.8	64.52	0.431	1.293	48.4
13	0.512	30.0	1	220	0.790	54.1	6.84	124.3	30.6	3.87	70.4	56.63	0.317	0.729	40.1
14	0.495	30.0	1	190	0.750	48.0	6.40	91.2	34.1	4.54	64.8	71.00	0.317	0.602	42.2
15	0.512	33.3	1	480	0.798	42.0	5.26	201.4	29.7	3.72	142.6	70.78	0.370	1.770	46.3
16	0.462	30.8	1	460	0.726	41.1	5.66	189.0	20.9	2.88	96.5	50.97	0.314	1.440	43.8
17	0.512	33.7	1	830	0.687	30.0	4.37	249.0	19.4	2.82	160.6	64.50	0.396	3.287	57.4

TABLE 2.—*Sweat in Senile Eczema*

Number	Blood Chlorides per 100 Cc., Gm.	Blood Nonprotein Nitrogen per 100 Cc., Mg.	Time, Hour	Amount Sweat, Cc.	Total Solids per 100 Cc., Gm.	Nonprotein Nitrogen per 100 Cc., Mg.	Nonprotein Nitrogen in Total Solids, per Cent	Nonprotein Nitrogen per Hour, Mg.	Urea Nitrogen per 100 Cc., Mg.	Urea Nitrogen in Total Solids, per Cent	Urea Nitrogen per Hour, Mg.	Urea Nitrogen in Nonprotein Nitrogen, per Cent	Chlorides as NaCl per 100 Cc., Mg.	Chlorides as NaCl per Hour, Gm.	Chlorides in Total Solids, per Cent
1	0.495	40.0	40 Min.	50	0.602	41.5	5.99	31.1	26.3	3.80	19.7	63.5	0.253	0.189	36.6
2	0.538	33.0	1 15 Min.	70	0.690	63.2	9.15	35.4	42.9	6.21	24.0	67.9	0.133	0.074	19.1
3	0.512	31.0	1	70	0.546	50.0	9.16	35.0	33.7	6.17	23.6	67.4	0.175	0.122	32.0
4	0.429	37.5	1	170	0.948	44.4	4.69	75.6	31.8	3.35	54.1	71.5	0.548	0.931	57.8
5	0.470	46.9	1	170	0.768	60.0	7.81	102.0	41.5	5.39	70.5	69.1	0.335	0.570	43.6

gen in the nonprotein nitrogen are higher in this series than in the former group. The chlorides in the normal specimens examined vary from 0.188 to 0.469 mg. per hundred cubic centimeters, but the amount of chlorides per hundred cubic centimeters of sweat is more constant than the amounts of nonprotein nitrogen.

Table 2 gives in detail the five cases of senile eczema studied. It will be noticed that the amounts of sweat in these cases are quite small as compared with the normal.

Table 3 gives in detail the seven cases of psoriasis investigated.

Table 4 shows the average amounts of blood nonprotein nitrogen and blood chlorides per hundred cubic centimeters and also the average amounts of solids, within the normal limit. The same fact was noted in the former communication.

Table 5 gives the most valuable comparative information, because here the amounts represent hourly excretion, which I consider most significant. The five cases of eczema studied show a marked diminution in the amounts of nonprotein nitrogen, urea nitrogen and salts excreted per hour when compared with the normal cases.

In view of the fact that the group of patients with eczema is small, and in order to make a more just comparison, I averaged the amounts of nonprotein nitrogen, urea nitrogen and chlorides excreted per hour in the five normal cases with the lowest values. The cases chosen were numbers 1, 4, 6, 8 and 14. The

TABLE 3.—*Sweat in Psoriasis*

Number	Blood Chlorides per 100 Cc., Gm.	Blood Nonprotein Nitrogen per 100 Cc., Mg.	Time, Hour	Amount Sweat, Cc.	Total Solids per 100 Cc., Gm.	Nonprotein Nitrogen per 100 Cc., Mg.	Nonprotein Nitrogen in Total Solids, per Cent	Nonprotein per Hour, Mg.	Urea Nitrogen per 100 Cc., Mg.	Urea Nitrogen in Total Solids, per Cent	Urea Nitrogen per Hour, Mg.	Urea Nitrogen in Nonprotein Nitrogen, per Cent	Chlorides as NaCl per 100 Cc., Mg.	Chlorides as NaCl per Hour, Gm.	Chlorides in Total Solids, per Cent
1	0.466	28.0	1	100	0.702	28.9	4.84	36.9	16.9	2.21	16.9	45.5	0.322	0.322	42.3
2	0.462	26.0	1	200	0.592	29.1	4.92	104.8	17.6	2.79	63.5	60.6	0.317	1.140	53.5
3	0.480	37.7	1	235	0.846	40.0	4.73	86.7	29.8	3.41	62.6	74.6	0.515	1.120	60.8
4	0.479	32.3	5 Min. 1	400	0.622	33.3	5.36	123.1	17.1	2.75	63.3	51.4	0.307	1.060	49.3
5	0.611	35.8	5 Min. 1	150	0.966	70.6	7.31	105.9	35.7	3.79	53.6	50.6	0.389	0.584	40.3
6	0.486	27.2	1	500	0.477	27.3	5.72	160.9	17.9	3.74	105.3	65.5	0.215	1.270	45.0
7	0.462	30.9	1	190	0.800	58.3	6.77	110.7	30.1	4.20	68.7	62.0	0.323	0.615	37.6

TABLE 4.—*Summary of Amounts in One Hundred Cubic Centimeters of Sweat*

Diagnosis	Number	Blood Nonprotein Nitrogen per 100 Cc. Range, Mg.	Blood Nonprotein Nitrogen per 100 Cc. Average, Mg.	Blood Chloride as NaCl per 100 Cc. Range, Gm.	Blood Chloride as NaCl per 100 Cc. Average, Gm.	Total Solids per 100 Cc. Range, Gm.	Total Solids per 100 Cc. Average, Gm.	Nonprotein Nitrogen per 100 Cc. Range, Mg.	Nonprotein Nitrogen per 100 Cc. Average, Mg.	Urea Nitrogen per 100 Cc. Range, Mg.	Urea Nitrogen per 100 Cc. Average, Mg.	Chlorides as NaCl per 100 Cc. Range, Gm.	Chlorides as NaCl per 100 Cc. Average, Gm.
Normal	17	23.0 to 40.5	31.1	0.446 to 0.578	0.457	0.514 to 0.890	0.680	27.0 to 62.8	41.7	16.8 to 38.5	25.9	0.188 to 0.469	0.310
Senile eczema	5	31.9 to 46.9	37.7	0.429 to 0.539	0.489	0.546 to 0.948	0.729	41.5 to 63.2	51.8	26.3 to 42.9	35.2	0.132 to 0.548	0.289
Psoriasis	7	23.0 to 37.7	30.5	0.446 to 0.611	0.491	0.477 to 0.966	0.732	27.3 to 58.3	42.2	16.9 to 35.7	24.3	0.215 to 0.515	0.341

TABLE 5.—*Elimination of Nonprotein Nitrogen, Urea Nitrogen and Chlorides per Hour*

Diagnosis	Number	Nonprotein Nitrogen per Hour Range, Mg.	Nonprotein Nitrogen per Hour Average, Mg.	Urea Nitrogen per Hour Range, Mg.	Urea Nitrogen per Hour Average, Mg.	Chlorides as Sodium Chloride per Hour Range, Gm.	Chlorides as Sodium Chloride per Hour Average, Gm.	Urea Nitrogen in Nonprotein Nitrogen Range, per Cent	Urea Nitrogen in Nonprotein Nitrogen Average, per Cent	Chlorides in Total Solids Range, per Cent	Chlorides in Total Solids Average, per Cent
Normal	17	51.9 to 240.0	131.1	29.6 to 160.6	81.6	0.212 to 3.287	1.136	50.97 to 73.05	62.20	29.20 to 63.32	44.57
Senile eczema	5	31.1 to 102.0	55.8	23.6 to 70.5	38.4	0.074 to 0.931	0.377	63.5 to 71.5	67.9	19.1 to 57.8	37.3
Psoriasis	7	36.9 to 160.9	104.1	16.9 to 105.3	61.9	0.322 to 1.270	0.873	45.5 to 74.6	58.6	37.6 to 60.8	47.0

nonprotein nitrogen, urea nitrogen and chlorides per hundred cubic centimeters of sweat in the seventeen normal cases, the five patients with eczema, and the five psoriatic patients examined. As was stated before, the nonprotein nitrogen and chlorides in the blood are within normal range. The total solids show no striking variation in any group. The amounts of nonprotein nitrogen and urea nitrogen per hundred cubic centimeters in the five cases of eczema are higher than in the normal cases. I feel that this difference is due to the small amounts of sweat obtained from these patients with eczema, and that these figures do not represent the true excretory power of the skin. The average amount of chlorides per hundred cubic centimeters in the five patients with eczema is slightly lower than the normal average, despite the lower excretion of sweat. All of the values obtained in the psoriatic group are well average of these five cases were: nonprotein nitrogen, 74.7 mg. per hour; urea nitrogen, 46 mg. per hour; chlorides, 0.459 Gm. per hour. The corresponding amounts for the group with senile eczema were: nonprotein nitrogen, 55.8 mg. per hour; urea nitrogen, 38.4 mg. per hour; chlorides, 0.377 Gm. per hour. Even with this comparison the amounts of nonprotein nitrogen, urea nitrogen and chlorides in the group with eczema were appreciably less. The psoriatic group does not show any marked change from the normal group.

In table 5, the chlorides expressed as percentages of the total solids are also given. It is seen that the chlorides in the normal and psoriatic cases make up almost 50 per cent of the total solids, whereas in the patients with eczema the percentage of chlorides in the total solids is appreciably less than in either of the foregoing two groups.

CONCLUSIONS

1. These experiments tend to substantiate further a possible etiologic relationship between so-called senile eczema and the excretion of nitrogenous elements in the sweat.

2. The diminution in the output of the chlorides of the sweat through the skin in the eczema group as compared to the normal cases suggests that the salts too may play together with the nitrogenous elements an etiologic rôle in this condition.

3. In an examination of twenty-nine specimens, we were unable to determine the presence of uric acid in significant amounts, either quantitatively or qualitatively.

4. It should be noted here that this sweat was obtained by the injection of pilocarpine.

Physical Therapy

THE FOLLOWING REPORT HAS BEEN APPROVED BY THE COUNCIL ON PHYSICAL THERAPY OF THE AMERICAN MEDICAL ASSOCIATION.

H. J. HOLMQUEST, SECRETARY.

PRELIMINARY REPORT OF THE COMMITTEE ON EDUCATION *

Such educational opportunities as are necessary to teach the proper practice of the various methods of physical therapy may be divided into three heads: (1) premedical school courses; (2) courses in medical schools; and (3) courses of information for the practicing physician.

PREMEDICAL COURSES

The Committee believes that courses in biologic physics should be added to the curriculums of premedical schools. This recommendation is in agreement with a similar recommendation made several years ago by a committee of the National Research Council. The Committee realizes that this will be a slow process, owing to the lack of properly qualified instructors.

While the selection of the subject matter for courses in biologic physics must always be made by the men responsible for such courses, the Council on Physical Therapy will be glad to act in an advisory capacity in laying out the broad outlines of the courses. The chairman of the Committee on Education has already received a request for such advice from a state university.

As the courses in biologic physics are concerned with the application of physical principles to biologic problems, greater emphasis should be placed on the biologic needs than on the physical side of the subject. The instructor should have, therefore, a broad knowledge of the biologic phenomena that may be attacked through physical methods. He should be primarily a trained biologist rather than a trained physicist.

Courses in physics naturally are planned and taught by physicists, who usually look on this subject as a branch of applied mathematics. They are interested in training students to make physics their life work. Great emphasis is placed on the exactness of the methods of physical investigation. It would be highly advantageous to the students and to the department if, in the regular physics courses, physical principles were more frequently illustrated by biologic material. The biologically minded student might have a different attitude toward physics if he realized that many of the fundamental principles in physics were discovered and elaborated by biologists for use in their biologic investigations, and that, as a result of these contributions, many biologists have been inscribed in the history of science as physicists.

MEDICAL COURSES

The courses in the medical school should be open to upper classmen and graduate students, and should be given by men who are familiar with physical principles, but whose primary interest is in therapeutic applications. The courses would best be given in connection with hospital clinics.

COURSES FOR PRACTITIONERS

Information for practicing physicians could be given, first, by a series of carefully prepared articles published in the current scientific magazines, and, second, by encouraging the presentation of papers on physical therapeutic topics before medical societies. They should not be of the usual case-report type, nor should their content be a summary of contributions to the progress of medicine. The purpose of the papers should be a purely educational one.

* This preliminary report of the Committee on Education is to be followed by additional reports on the medical aspects of education in physical therapy.

Clinical Notes, Suggestions and New Instruments

UNDULANT (MALTA) FEVER: TWO FATAL CASES IN MICHIGAN

DON H. DUFFIE, M.D., CENTRAL LAKE

Of human infections with organisms of the melitensis-abortus group, three clinical types are recognized: a chronic form, lasting months, with remissions; a subacute form, and the rarer malignant type here described.

R. S., a farmer, aged 46, with his wife and three children, moved last April to a farmhouse which had been long abandoned. They were all soon ill with what they believed to be influenza, suffering the conventional aches, pains and respiratory symptoms, but not calling a physician till all but one child had recovered. This child, a boy, aged 6, passed into a lethargic stupor, broken every few minutes by whining cries, which condition continued till death, seven days later. During this time their horses had distemper (as they said) and for a while were expected to die.

The boy's temperature was very irregular: 106 F. one day and normal the next. The leukocyte count was 20,000. Signs, but no symptoms of pulmonary consolidation were found. The urine showed heavy albumin, and about one-tenth the volume of the specimen tested was made up of masses of hyaline casts.

A limited necropsy showed both croupous and purulent bronchopneumonia patches, but marked congestion and cloudy swelling only in the kidney. A diagnosis was not made.

At the time of the boy's death, the father complained of severe headache and was found to have a temperature of 103 F. The next day the mother was taken ill.

Characteristic observations for both the man and the woman were: Headache, severe and continuous, for the first week. A temperature of 104 F.; a pulse of 78; respiration, 28, and a leukocyte count of 4,500. Both were in a condition of continuous semistupor, with little natural sleep; the woman was rational, and the man was delirious. There was copious perspiration for about five days, especially profuse with the man. He developed orchitis.

The woman gently vomited nearly everything taken, but there was no diarrhea. With the man, there was persistent

diarrhea and no vomiting. A ferric chloride test made on the woman was positive, becoming negative after intravenous injections of dextrose and insulin, but having no effect on vomiting. Otherwise the urines of the two patients were negative.

The man had rose spots, in successive crops; till by the seventh day his trunk was nearly covered with them; the woman had none.

Blood cultures and tests of urines and stools were repeatedly negative for the typhoid group, but all blood and urine tests were weakly positive (1:40) agglutination for *B. abortus*. (Dr. Huddleson says that this low titer is seen in some positive culture cases.)

After about twelve days, signs of pulmonary consolidation appeared, death following in two or three days.

Further limited necropsies showed sterile bile, and no evidence of typhoid in the intestines (Warthin). There was consolidation of the lungs at the bases. The woman's spleen was about twice the normal size; the man's was normal.

A discussion of these cases with Dr. Huddleson of the Michigan State College elicited his unhesitating diagnosis of *B. abortus* infection.

It is suggested that other cases of unusual and unconfirmed "typhoid" may be of this nature.

LUDWIG'S ANGINA AND MEDIASTINAL ABSCESS FOLLOWING TONSILLECTOMY; OPERATION; RECOVERY

CARL M. SAUTTER, M.D., NEW YORK

Much has happened in the last fifty years to further the progress of tonsil surgery and to stimulate the interest in medical history. After a fairly thorough search of the literature from 1890 to 1922, I am convinced that mediastinal abscess is a very rare terminal complication following a tonsillectomy. In a review made for me four years ago by the American Institute of Medicine, forty-one mediastinal histories were given, none of which ascribed the original source of infection to the tonsils. Fifteen of these cases were traumatic, occurring during the late war, due to bullet, grenade or stab wounds. Forty per cent of these were fatal, death occurring as the result of collapse, pulmonary sepsis, a rupture into the pericardium and great absorption from the rich lymphatic supply. Loeb, in his exhaustive study of fatal complications following tonsillectomy, fails to mention this one.

Glogau, in his article on phlegmonous conditions of the neck, advises carrying an incision down to the sternum and sealing off the mediastinum above the clavicle with gauze to prevent a descending abscess; he cites two cases in which this procedure was adopted, which terminated fatally with some pus found in the mediastinum at postmortem. The advisability of this technic as a routine method, however, seems questionable because of the relative infrequency of the condition. Furthermore, from a cosmetic point of view, one naturally avoids unsightly scarring as far as may be, and also the possibility of defeating one's purpose by unintentional infection of the mediastinum by this form of prophylactic surgery. With the modern facilities available, an early roentgenographic diagnosis may readily be made and the need for such extreme measures averted.

In view of the rarity of this complication, the following case history is submitted as an instance of success in combating it.

REPORT OF CASE

J. M., a man, aged 26, was admitted to the Hudson Street Hospital, on June 11, 1922 (a patient of the United States Health Hospital), in apparent good health, excepting that he suffered from frequent attacks of tonsillitis. His past history revealed no serious illnesses. On physical examination he appeared to be very well nourished, but the tonsils were extremely hypertrophied and cryptic. These were removed, June 23, under procaine hydrochloride anesthesia by one of the house staff physicians, in the clinic of the ear, nose and throat department.

June 29, I was called in consultation, and found the patient with a temperature of 103.6 F., and all the symptoms of Ludwig's angina and general sepsis. The throat was extremely sore and of a bluish tint, and the submaxillary glands were involved. He was hoarse, coughing and expectorating considerable blood-tinged, purulent material, and he had difficulty in swallowing. The tonsillar pillars appeared to be intact, and there was no evidence of any unusual trauma as the result of the tonsillectomy. Both sides of the neck were markedly swollen externally, with a perceptible emphysema.

An incision 1 inch in length was made on both sides below and parallel to the ramus of the inferior mandible, and another of the same length was made vertically in the median line below the chin. Very foul pus exuded freely from the points of drainage, and considerable flatus. A rubber drain was placed from the sides to the median line, and the wound was irrigated every four hours with surgical solution of chlorinated soda (Dakin's solution).

Culture from the pus showed no definite organism at the hospital laboratory, and this was confirmed by a private bacteriologic examination. No smear was taken, but it is quite likely that one of the spirochetes which failed to take the stain accounted for the virulence of the infection. The blood culture taken at this time was negative. The patient's temperature on this day ranged between 101 and 103 F.

July 10, the flow of suppuration from the right side had ceased; the left side was still discharging profusely. Palpation revealed that the pus was coming from the lower part of the neck, obviously from the mediastinal cavity. At this time the patient's condition was very bad. He was prostrated, extremely dyspneoid with a pronounced tachycardia, and he had a persistent cough with purulent expectoration; the temperature was 103 F.; the pulse, 128. The great difficulty in breathing was no doubt due to vagus pressure.

Under gas and oxygen anesthesia, an incision was made along the anterior border of the sternomastoid muscle to the sternum, and resection was performed in a manner similar to the technic for a jugular resection. Of course, the vessels in the carotid sheath were not disturbed. Following digital examination beneath the sternum, a considerable amount of foul pus escaped from the superior mediastinal cavity.

A roentgenogram taken the following day showed a very dark mediastinal area, with peribronchial infiltration.

After this operation, the patient's condition improved perceptibly and he breathed more freely, but August 2 the discharge was still profuse from above the sternum, though it was more serous and syrupy in appearance. Examination with a probe revealed a small rubber drain in the cavity which had been overlooked, no doubt owing to the fact that several physicians had dressed the case in the interim. This probably accounted for the osteomyelitis which caused the benign watery discharge. The patient had gained considerably in weight and his color was good.

Some time after the rubber drain had been removed there was still some watery drainage.

Believing that a sternotrepanation was necessary, I advised calling in a general surgeon and this operation was performed. The patient left the hospital several weeks later. At this time, there was still some small amount of watery discharge, but he was in excellent health.

CONCLUSIONS

If a patient is not doing well in either primary or secondary inflammations of the neck, and if time permits, frequent roentgen-ray examinations should be made to anticipate any mediastinal infiltration.

The drainage incision for Ludwig's angina should be made at the lowest level of the cellulitis and, whenever possible, parallel with and anterior to the border of the sternomastoid muscles; the lower end of the wound should be packed off to minimize the possibility of a descending infection.

It is generally conceded that most postoperative tonsil infections occur following local anesthesia; therefore a rigid surgical technic should be observed in every tonsillectomy, including the use of rubber gloves and suction to remove any infectious or sebaceous material.

In thus emphasizing sterilization, no reflections are intended against any technic that may be followed by a phlegmonous complication, for it is conceivable that despite the utmost care such an unfortunate condition may occur.

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SATURDAY, NOVEMBER 27, 1926

GOITER PROPHYLAXIS WHERE THE INCIDENCE OF GOITER IS LOW

Ever since the discovery of the widespread occurrence of simple or endemic goiter in this country among persons of adolescent age, and the demonstration of the prophylactic advantage that minute doses of iodine afford where the thyroid involvement is common, goiter prevention has become a public health project. There is always a danger that interest in new hygienic or therapeutic measures may lead to extremes of practice. Our population is peculiarly prone to overenthusiasm, which in turn may react unfavorably and unjustly against even the best of purposes. Goiter prophylaxis has, quite properly, won speedy acceptance as a desideratum in public health activities. It remains to be ascertained, however, whether the preventive measures already instituted in many places throughout the United States are justifying the expectations of their sponsors; likewise whether, on the one hand, goiter prophylaxis is being introduced with sufficient thoroughness and wherever it is really needed, or, on the other hand, whether there are possibilities of unnecessary if not actually unwarranted remedial efforts.

Most of the so-called thyroid surveys among children of school age have been conducted in regions where a high incidence of endemic goiter might be expected. They have served for the most part to fortify the purposes of the advocates of prevention. A recent survey of twenty-eight localities in Connecticut by experts of the United States Public Health Service[1] indicates what may be expected in essentially nongoitrous areas. Accepting the iodine deficiency theory of simple goiter causation, one would expect this state to show relative infrequency of thyroid enlargement; for the proximity to the seaboard and the excellent transportation facilities for readily obtainable sea food and other iodine-containing dietary articles make a serious deficiency in iodine improbable.

In all, there were 2,347 thyroid enlargements, a percentage of 18.9, among the 12,405 children examined. As usual, the incidence was decidedly greater among the girls. So far as the present survey is concerned, there appears to be no section of the state of Connecticut in which endemic thyroid enlargement is more prevalent than another. The figures quoted may be contrasted, for example, with the incidence of 58 per cent in the Minnesota survey or 33 per cent in Cincinnati. There appears to be no correlation between the prevalence of thyroid enlargement and the principal geological formations in Connecticut. The situation there is one that, in the opinion of the government consultants, does not call for the institution of state-wide goiter prophylaxis through the use of iodized water supplies, iodized table salt, or wholesale distribution of tablets containing iodine. The problem is primarily one of prevention and treatment of thyroid enlargement among adolescent girls. The surgeons of the United States Public Health Service believe that prophylactic measures should be carried out among girls between the ages of 11 and 16 years, under the direction of local health authorities, guided and assisted by the state department of health and the local medical practitioners. The prophylactic methods chosen appear to be immaterial, provided skilled supervision, low dosage of iodine, regularity and economy of administration are available. In such an environment, iodine prophylaxis must itself be safeguarded from abuse. The element should not be prescribed where it is not likely to be needed. Furthermore, with many commendable public health projects pressing for public funds, more pressing needs may call for first consideration. Plummer has frankly expressed the opinion that more intensive programs for goiter prevention should at present be concentrated where the disease is more prevalent. This is a sane view under present conditions.

1. Olesen, Robert; and Taylor, N. E.: Incidence of Endemic Thyroid Enlargement in Connecticut, Pub. Health Rep. **41**: 1695 (Aug. 13) 1926.

SOCIAL SELECTION IN RACIAL DEVELOPMENT

The circumstance that our population includes a considerable proportion of persons of limited capacity has given concern to those who are interested in race progress and human betterment. They fear a possible degradation through the workings of the now familiar laws of heredity under conditions in which human matings may bring undesirable characters of mind and body into prominence. Such misgivings have largely been responsible for the recommendation of eugenic improvement through the control of heredity. An enthusiast on this subject has pointed out, however, that eugenics does not require the old Spartan practice of infanticide, nor does eugenics propose to do violence in any other way to humanitarian or religious feeling. Eugenics does not mean, as some have imagined, compulsory or government-made marriages. Nor is eugenics the science of improving the human stock by matings that are academically ideal, but which lack the element of individual attraction and instinctive love. On the contrary, eugenics, when it becomes generally

understood and applied, should increase the number of love marriages by making the ideals of young men and women more natural and normal and free from the extraneous influences of wealth, social position, or style.

Proposals of eugenic agencies that will "increase the birth rate of the fit and decrease that of the unfit" are largely academic at this time. One may speak feelingly about the education of all people on the inheritability of traits and the consequent development of higher and more intelligent ideals of marriage; but the unrecognized *mores* often enter into social conduct in an effective way to a degree not always appreciated. In a mixed population, social selection may actually produce genetic consequences that gradually affect the physical character of a race. In a study of this feature at the department of anthropology in Columbia University, New York, Herskovits [1] has pointed out that in the development of human types the effect of social selection is an important factor which has often been disregarded, perhaps because of difficulty in measuring the qualities that determine the selection practiced, or, indeed, of discovering what these qualities may be. He has discovered that there is a definite type of selection practiced by American negroes, based largely on skin color, which manifests itself in many aspects of the life of these people, particularly in marriage. Herskovits has detected a strong trend toward dark men mating with light women, a tendency which, if continued, must in time affect the physical type of the American negro population. This is not due to a sex difference in skin color in unmarried negroes. The darkest women seem to marry men of about their color or lighter, but the lighter women, and those not pronouncedly dark, marry men darker than themselves.

Thus it seems that a social selection among the negroes in this country on the basis of skin color is occurring. What the effect on future generations will be, Herskovits adds, depends largely on the continuation in force of the present *mores* regarding such selection. If they continue, however, the daughters of these matings will be, in the main, darker than their mothers, and, if they are selected in turn and choose for themselves still darker men, the effect will be that the American negro population will become nearer the negroid type as far as color is concerned, since the relative amount of negro blood in the negro population will be increased. Herskovits also believes that with this social selection in operation, and with the stoppage of further crossing with whites which is occurring, it is reasonable to conclude that there will not be change toward the white norm. The physical development of man is, of course, also inevitably influenced by his environment and mode of living. These enable his inherent capacities to evince themselves; hence the much neglected importance of euthenics, or right living. When a recent writer coined the assumedly all inclusive expression "euthenogenics," he probably failed to recognize the possible potency of unconscious social selection in the operation of natural laws pertaining to the development of the race.

1. Herskovits, M. J.: Social Selection in a Mixed Population, Proc. Nat. Acad. Sc. **12**: 587 (Oct.) 1926.

THE PERPETUATION OF THE SHEPPARD-TOWNER IDEA

An immediate onslaught of Sheppard-Towner propagandists, to jam through Congress the pending bill [1] to extend the life of the Sheppard-Towner Act, may be expected when Congress convenes, December 6. As passed by the House of Representatives, this bill proposes to extend the act for two years. The Senate Committee on Education and Labor has recommended, however, that the extension be reduced to one year, and with that recommendation the bill is now on the Senate calendar. Its proponents will probably urge amendment on the floor of the Senate to provide for a two year extension, and its immediate enactment as thus amended. Unless the bill is promptly enacted, the thirty-nine legislatures that convene in January can hardly enact the reciprocal state legislation necessary to consummate the purchase by the federal government of the constitutional right of the states to control hygiene and sanitation within their own borders.

When the Sheppard-Towner Act was passed in 1921, its leading proponents represented that it was for the protection of mothers and infants inadequately protected by the states; that the protection was to be afforded through social and economic reforms, and that the act was to be operative for five years only. Today, however, money appropriated under the act for mothers and infants is being diverted to the use of older children; the act has blossomed forth as a full-fledged health measure, and its proponents claim that the act is permanent legislation. If these things suggest lack of understanding or of good faith on the part of those who procured the passage of the act in the first instance and who have administered it since, so does the bill now pending. It implies that two years will mark the end of the Sheppard-Towner adventure; under cross-examination in the committee hearing, however, proponents of the bill admitted that the extension now sought is the first of a series of proposed extensions—but how many or for how long a time they absolutely refused to say. Statistics are being used to support the passage of the present bill that relate exclusively to infant mortality, whereas the money appropriated under the act is being used for the benefit of older children as well. The hearing on the bill before the Committee on Interstate and Foreign Commerce of the House of Representatives was held without notice to opponents of such legisla-

1. H. R. 7555, An Act To authorize for the fiscal years ending June 30, 1928, and June 30, 1929, appropriations for carrying out the provisions of the Act entitled "An Act for the promotion of the welfare and hygiene of maternity and infancy, and for other purposes," approved November 23, 1921.

tion—in fact, almost before knowledge of the introduction of the bill had left Washington, and certainly before copies of the bill were available outside the national capital.

A bill with such a background and history condemns itself. A worthy bill does not have to be forced through Congress by specious arguments as to its modus operandi, nor does it need to be perverted from its professed purpose after its enactment. A meritorious bill can safely run the gantlet of open committee hearings with equal opportunity for the two sides. No basis of accomplishment has been laid for the proposed extension of the Sheppard-Towner Act; apparently it has accomplished nothing within its allotted life to justify Congress in continuing its adventure into the field of state management. Yet its proponents are unwilling to abandon the experiment! Perhaps the same political astuteness that procured the passage of the original act will procure its extension, unless the medical profession joins more actively than heretofore in the movement to prevent its enactment. The fallacies of the Sheppard-Towner doctrine have already been pointed out in THE JOURNAL,[2] in the *American Medical Association Bulletin*[3] and elsewhere. Reprints of articles exposing such fallacies will be furnished by the Association on request to physicians and others desiring to join in the movement to check the continuance of "Sheppard-Townerism."

Current Comment

BLOOD TESTS FOR PATERNITY

Recent work on the blood groups has increased the interest in the medicolegal applications in cases of disputed parentage. Ottenberg's tables,[4] which have been the standard in such cases, are based on the assumption that the blood groups are inherited as two independent pairs of mendelian unit factors. Recently, however, it has been shown that the blood groups are inherited as a series of three multiple allelomorphs. This hypothesis was suggested independently by Bernstein[5] in Germany and Furuhata[6] in Japan. It was immediately confirmed by Snyder[7] in the United States, and has been accepted by most of the blood workers of the world. This hypothesis does not invalidate any of the previous tests, but makes the application even more close. Putting the blood groups on a multiple allelomorph basis means that the genetic factors responsible for the four groups are all located at the same spot on a single pair of chromosomes. Three factors, a recessive R and two dominants A and B, are considered the basis of the four groups. Thus, group I (Jansky) has the genetic formula RR; group II, AA or AR; group III, BB or BR and group IV, AB. On this hypothesis, it is easy to see that a group IV parent can never have a child of group I. Unions of group I and IV can result only in offspring of groups II and III, instead of in all four groups as was previously thought. The medicolegal application becomes therefore even more strict. Crosses of I and I can result only in offspring of group I. Crosses of I and II, or II and II, can result only in offspring of groups I and II. Crosses of I and III, or III and III, can result only in offspring of groups I and III. Crosses of II and III can produce children of all four groups. Unions of I and IV can result only in offspring of groups II and III. Unions of II and IV, III and IV, or IV and IV, can produce children of groups II, III and IV, but never of group I. These tests for paternity can be made by any one capable of performing an accurate agglutination test, regardless of his personal knowledge of the principles of heredity. As Moritsch has said, "Men are always willing to submit to the test since it may exonerate but cannot incriminate them."

2. Protest the Sheppard-Towner Act, Current Comment, J. A. M. A. **86**: 421 (Feb. 6) 1926; Again, Protest the Sheppard-Towner Act, ibid. **86**: 1458 (May 8) 1926.
3. Woodward, W. C.: The Sheppard-Towner Act: Its Proposed Extension and Proposed Repeal, A. M. A. Bull. **21**: 126 (May) 1926.
4. Ottenberg, Reuben: Medicolegal Application of Human Blood Grouping, J. A. M. A. **77**: 682 (Aug. 27) 1921; **78**: 873 (March 25) 1922.
5. Bernstein, F.: Ztschr. f. Indukt. Abstammungs- und Vererbungsl. **37**: 237, 1925.
6. Furuhata, T.: Tenth Congress of Japanese Forensic Medicine, 1925.
7. Snyder, L. H.: Am. J. Phys. Anthrop. **9**: 233, 1926.

THE ALLEGED ABSORPTION OF BILE PIGMENT FROM THE INTESTINE

For many years, students of physiology have been taught the doctrine of a so-called circulation of the bile. By this is meant the reabsorption, either as such or in the form of decomposition products, of parts of the hepatic secretion that have been discharged into the intestine. More strictly speaking, it might be designated as an intestinal-hepatic circulation of biliary products. In the case of the bile acids, the importance of this is readily understood. In solution they act as solvents for the fatty acids and thus facilitate the absorption of the latter. Furthermore, the bile acids appear to be the most effective cholagogues, so that their reabsorption provides an economic stimulus to the bile secretion. Similar purposeful arguments cannot be applied in the light of present knowledge to the possible reabsorption of the bile pigments. Under ordinary circumstances they are not found in the feces; but this cannot be taken as cogent evidence of their disappearance from the bowel through reabsorption. Urobilin, a derivative of bilirubin arising through bacterial decomposition, does occur in the excrement. Previous studies to ascertain the alimentary fate of bilirubin aside from its possible conversion to urobilin have led to conflicting opinions.[1] Whipple and his co-workers have concluded that intestinal absorption of unchanged bile pigment does not occur, in contrast to the reverse views of the physiologic investigators at the Rockefeller Institute for Medical Research. Studies[2] at the Mayo Foundation have had the advantage of extremely delicate methods of measuring the pigment distribution. With these it has been found

1. Whipple, G. H.: The Harvey Lectures **17**: 95, 1921-1922; Physiol. Rev. **2**: 440 (July) 1922. Broun, G. O.; McMaster, P. D., and Rous, Peyton: J. Exper. Med. **37**: 699 (May) 1923.
2. Bollman, J. L.; Sheard, C., and Mann, F. C.: The Absorption of Bile Pigment from the Intestine, Am. J. Physiol. **78**: 658 (Nov. 1) 1926.

that the bilirubin content of the blood of the mesenteric veins is essentially the same as the bilirubin content of arterial blood. This is equally true whether the specimens are obtained from a fasting animal or from animals at different periods of digestion, or whether large amounts of bile have been previously introduced into the intestine. Large amounts of fresh gallbladder bile administered directly into the intestine were without effect on the rate of developing jaundice following ligation of the common bile duct and extirpation of the gallbladder. It is therefore concluded that no intestinal absorption of bilirubin occurs under ordinary conditions.

MILKSICKNESS, OR "TREMBLES"

A malady variously known as milk fever, "trembles," slows, or puking fever has long been recognized in this country. The etiology of the disease, for a time suspected without real scientific justification to be of infectious nature, has of late been ascribed with greater probability to a toxic agent derived from poisonous plants. Animals are known to be affected by richweed (*Eupatorium urticaefolium*) and likewise the rayless goldenrod (*Aplopappus heterophyllus*). In cattle and sheep there is a gradual loss of appetite, drowsiness and muscular tremor—hence the designation "trembles." The malady is transmissible to man as well as to other animals feeding on the flesh or milk of the diseased individuals. For this reason apparently the theory of the existence of a transmissible virus was proposed, although attempts at production of the malady through inoculation with the blood, flesh, milk or other secretions has never been successfully accomplished. It is no longer necessary, however, to invoke the aid of an infection hypothesis when it is realized that the materies morbi, presumably a well defined organic poison, can pass into the milk and thus reach the human organism through dairy products prepared from animals that have grazed on the dangerous plants. Milksickness in man occurs especially in the late summer and autumn at a time when trembles in cattle and sheep is also prevalent. Clinicians have long since described a peculiar sweetish odor of the breath that is quite characteristic of the disease.[1] Couch,[2] of the Bureau of Animal Industry in Washington, has detected acetone in both urine and expired air of animals poisoned by richweed or rayless goldenrod. This throws light on the human symptoms. Couch believes that the poisoned animals suffer from a ketosis. The fact that excretion of acetone does not begin until after the onset of the characteristic trembling—whence the common name "trembles" for the disease—suggests, he writes, that the ketogenesis may be a secondary effect of the intoxication. This is supported by the fact that common remedies for acidosis do not appear to alter the course of the disease. Walsh[3] long ago diagnosed the human disease as an acidosis and recommended the use of sodium bicarbonate as a remedy. In the pioneer days when milksickness was common because pastures were less safe, bloodletting was often practiced and probably greatly increased the mortality. The recognition of the toxic factor responsible for the onset of the disease, and of ketosis as a subsequent symptom, should facilitate both diagnosis and treatment of a once obscure malady.

1. Brown, T. R.: Osler's Modern Medicine, Philadelphia **3**: 547, 1907.
2. Couch, J. F.: Acidosis, Trembles and Milksickness, Science **64**: 456 (Nov. 5) 1926.
3. Walsh, W. E.: Illinois M. J. **15**: 422, 1909.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ARKANSAS

Special Courses at Hot Springs.—The Surgeon General, U. S. Public Health Service, announces that special courses in the control and treatment of venereal disease will be given at the venereal disease clinic of the public health service at Hot Springs for physicians, clinicians and health officers. There will be no fees charged for the course but the individual physician will necessarily pay his own expenses for living and travel. The classes will be held in the new building in which the clinic is operated, where, last year, 3,570 indigent persons were examined and 3,064 cases of syphilis and gonorrhea diagnosed. There are exceptional facilities for the study of venereal disease, especially in diagnosis, treatment and clinic management. The courses will consist of lectures by specialists attached to the clinic, demonstrations, as well as practical experience in diagnosis and treatment. New courses of not more than ten will form on the first day of each month and will continue for a minimum of thirty days, and those who complete the work satisfactorily will be presented an engraved certificate by the public health service. The courses are part of the cooperative work with the state health departments in the control of venereal diseases, and applications of physicians to take the course should be endorsed by the state health department in which the applicant resides before being submitted to the Surgeon General, U. S. Public Health Service, Washington, D. C.

CALIFORNIA

Society News.—The San Diego County Medical Society recently held "Navy Night"; the program was presented by Capt. Raymond Spear, Commandant, U. S. Naval Hospital, and other members of the naval hospital staff.——Dr. Harold K. Faber, professor of medicine and pediatrics, Stanford University School of Medicine, San Francisco, addressed the San Joaquin County Medical Society, October 7, on "Cranio Deformities in Infancy and Childhood."——The Tulare County Medical Society entertained the dentists of Tulare County, October 3; Charles Sweet, D.D.S., Oakland, among others, spoke on "Children's Dentistry." The secretary says that this was the most enthusiastic meeting held for some time.

Licenses Revoked.—At the October meeting of the California State Board of Medical Examiners, the following licenses to practice medicine in the state were revoked:

David (Oscar) Franklin, alleged to have practiced under the credentials of Dr. David Franklin who died in New York in 1903.

Dr. Frank C. Hart, following a formal hearing based on charges of conviction of a crime involving moral turpitude. Dr. Hart is reported to have been convicted of violation of the Mann Act in Portland, Ore., and the conviction was recently confirmed by the U. S. Supreme Court.

Dr. Edwin V. Heaton, based on his conviction of violation of the federal narcotic laws.

Dr. Lewis T. A. Hotten (formerly Hottendorf), based on his conviction of violation of the Harrison Narcotic Act, and followed by his incarceration in the penitentiary at Leavenworth, Kan.

Dr. O. E. Werner, following his conviction and incarceration in Wisconsin.

Clinical Prizes Offered by State Society.—Any member of the California Medical Association is eligible to compete for the 1927 clinical prize awards offered by the association. Any question of eligibility will be decided by the council. Papers should be sent to the secretary, Dr. Emma W. Pope, 1016 Balboa Building, San Francisco, before March 15, 1927, typewritten, double-spaced, flat and not more than 4,000 words. The judges will consider the basic importance of the work, the thoroughness with which the research has been carried out, the clearness with which it has been written up and the neatness of the manuscripts; they reserve the right to withhold the award should no paper come up to

the standard of excellence. Inquiries relative to the contest should be addressed to the chairman of the committee on clinical prize awards, Dr. Dudley Fulton, 1135 Pacific Mutual Building, 523 West Sixth Street, Los Angeles.

INDIANA

Society News.—At the thirty-sixth annual meeting of the Eleventh Councilor District Medical Society, Kokomo, October 21, Drs. James B. Herrick, Chicago; George S. Bond, Indianapolis, and Ralph C. Brown, Chicago, were among the speakers.——The Thirteenth Councilor District Society met at the Elkhart General Hospital, October 7, for a clinic, and in the afternoon was addressed, among others, by Dr. Francis V. Martin, Michigan City; Dr. John Pracher, Laporte, and Dr. Robert V. Hoffman, South Bend.

LOUISIANA

Society News.—Dr. Leroy H. Scott, among others, addressed the Fourth District Medical Society at Shreveport, October 5, on "Early Diagnosis of Extra-Uterine Pregnancy"; Dr. John L. Scales, Shreveport, was elected president, and Dr. Scott, Shreveport, secretary.

Health at New Orleans.—Telegraphic reports to the U. S. Department of Commerce for the week ending November 13, from sixty-five cities with a total population of about 29,000,000 indicate that the highest mortality rate (20.7) was for New Orleans, and that the rate for the group of cities was 12.2. The mortality rate for New Orleans for the corresponding week last year was 18.7, and for the group of cities as a whole, 12.6.

Personal.—Dr. John D. Spelman, of the Touro Infirmary, New Orleans, has been elected the first president of the newly organized Southern Hospital Association.——Dr. Henry J. Bayon, Jr., a recent graduate of Tulane University Medical School, has received an appointment to the staff of the American Hospital of Paris; Dr. Bayon is the son of Dr. Henry Bayon, professor of anatomy at Tulane.——Dr. Patrick H. Fleming was recently elected mayor of St. Martinville.

Drive for Hospital for Negroes.—Ground has been purchased at Robison and Delachaise streets, New Orleans, for a hospital for negroes and a campaign for $300,000 is under way. Thirty-five negro physicians had collected about $20,000 up to October 24. Many public school teachers gave $30 each; the entire negro population of New Orleans has been organized to make the drive a success. There is said to be only one hospital bed for each 2,000 negroes in the city, while the ratio of beds to the white population is one to 160.

Surprise for Dr. Matas.—On his return from Boston and the award of the Bigelow Medal, Dr. Rudolph Matas, New Orleans, was "lured" into the Hutchinson Memorial Auditorium of Tulane University, November 11, in the presence of a large crowd which gathered to surprise him and to present a gold watch and otherwise show its esteem. In the crowd were those who had taught Dr. Matas, others who had been his fellow students, his colleagues, his own students and representatives of civic organizations. The present was inscribed "From those who know you best and love you most."

Tuberculosis Sanatorium Nears Completion.—The first three buildings of the Greenwell Springs Tuberculosis Hospital will be opened about Christmas. The hospital is located on a wooded tract of 438 acres on the banks of the Amite River, purchased by the antituberculosis league, and, with the new buildings, represents an expenditure of about $100,000. The legislature appropriated funds for the construction of the buildings. The league, which also pledged $10,000, was formed in 1912 for the purpose of building a tuberculosis hospital, and it comprises the governor, president of the state board of health, the attorney general, one physician from New Orleans and two physicians from elsewhere in the state. The hospital is 16 miles east of Baton Rouge and 9 miles west of Denham Springs on the Greenwell Springs Highway. Visitors are welcome.

MASSACHUSETTS

Society News.—Drs. George R. Minot and William T. Murphy addressed the Harvard Medical Society at the Peter Bent Brigham Hospital, November 16, on "Pernicious Anemia: Remarks Concerning Treatment."

Harvard University News.—Dr. Walter B. Cannon, George Higginson professor of physiology, is the acting dean of Harvard University Medical School during the absence of Dr. David L. Edsall in China. Dr. Edsall was granted a six months' leave to enable him to accept an invitation to be visiting professor of medicine at Peking Union Medical College.——Dr. Cecil K. Drinker, professor of anatomy and assistant dean, School of Public Health and Hygiene of Harvard Medical School, has gone to the University of Copenhagen, Denmark, to work with Dr. Krogh. Dr. Drinker was granted a year's leave of absence from September 1, and during his absence Dr. William L. Moss is acting dean. ——Dr. Alice Hamilton will be on sabbatical leave for the academic year 1926-1927; her course in industrial toxicology will be given by Prof. Edgar L. Collis of the University of Wales.——Dr. Edward D. Churchill, instructor in surgery, and Dr. Frank Fremont-Smith, assistant in neuropathology, have been awarded the William O. Mosely, Jr., Traveling Fellowships for the present academic year.——Dr. Charles L. Connor, instructor in pathology, has been given a leave of absence that he may accept a temporary position as associate professor of pathology at McGill University.

Appointments at Boston University.—The following appointments to the faculty of the Boston University School of Medicine were recently reported: Dr. Charles T. Branch, assistant professor of pathology; Dr. Clara Loitman, instructor in pediatrics; Dr. Charles Sziklas, instructor in physical diagnosis and assistant in anatomy; Drs. John J. Elliott, Jr., Bernard Lederman and Sigmund Simons, assistants in obstetrics; Dr. Julius Gottlieb, assistant in pathology; Dr. Mina Claire Sprague, assistant in gastro-enterology; Drs. Edward L. Perry and Harry Schwartzman, assistants in ophthalmology, and Drs. Earle F. Frior and Maurice L. Silverstein, assistants in pediatrics. The following promotions have been reported: Drs. David L. Belding, William A. Ham, William D. Rowland, Edwin P. Ruggles, William H. Watters and J. LeRoy Conel, Ph.D., to full professorships; Drs. Edwin W. Smith and Myrtelle M. Canavan to associate professorships; Drs. John A. Foley, Winfred Overholser, William D. Reid and Clarence Wesley Sewall to assistant professorships; Drs. William H. Clewley and Henry Emmons to instructorships, and Dr. George H. Earl, lecturer. Dr. Albert W. Horr becomes emeritus professor of ophthalmology, and Dr. N. Emmons Paine, emeritus professor of psychiatry.

MICHIGAN

Personal.—Dr. David Emmett Welsh has resigned as treasurer of the Michigan State Medical Society, and Dr. John R. Rogers, Grand Rapids, has been appointed to that office. Dr. Welsh has served the society for fifteen years.

Wayne County Medical Society Moves.—The Wayne County Medical Society will move its headquarters about January 1 to the new Maccabees Building, Woodward and Putnam streets, Detroit. There will be an auditorium there on the first floor seating about 800, and, in the quarters on the eleventh floor, an office for the secretary, committee rooms, small dining room and roof gardens. The new quarters are centrally located with good parking facilities, and the expense of upkeep will be less than at present.

Annual Clinic at Highland Park.—The Highland Park Physicians Club will conduct its first annual clinic at the Highland Park General Hospital, December 2. Clinics will be held by Dr. Frank Smithies, Chicago, on "The Pathologic Gallbladder"; Dr. William S. Bainbridge, New York, "Tumors and Cancers"; Dr. John O. Polak, Brooklyn, "Obstetrics and Gynecology"; Dr. Edwin P. Sloan, Bloomington, Ill., and Dr. Irving W. Potter, Buffalo. Dr. George W. Crile, Cleveland, will lecture; Dr. James E. Sadlier, Poughkeepsie, N. Y., "Preventive Medicine and Postgraduate Medical Education," and Dr. Disraeli Kobak, Chicago, "Physiotherapy." The mayor of Highland Park will speak at the dinner; Dr. Polak will give the oration on obstetrics, and Dr. Smithies the oration on medicine.

Society News.—Thirty-eight physicians attended a postgraduate conference at Manistee, conducted by the state medical society, October 14, and fourteen of them drove more than 75 miles to the meeting. A physician at the Manistee conference stated that he had attended all conferences held in that section thus far; although he is mayor of his city, and on the board of supervisors, in addition to his practice; he remarked, "I wouldn't miss one unless I were sick."——Dr. Victor C. Vaughan, Washington, D. C., entertained the Grand Traverse-Leelanau County Medical Society, recently, at his summer home at Old Mission.——Dr. T. Wingate Todd, Henry Willson Payne professor of anatomy, Western Reserve

University School of Medicine, Cleveland, addressed the Wayne County Medical Society, November 16, on "Age: The Piper." November 23, the society held the annual feather party, and November 30, there will be a fracture symposium with demonstrations, participated in by Drs. Frederick C. Kidner, Alfred D. La Ferte and Alfred H. Whittaker, Dr. Charles L. Scudder, Boston, and Drs. Arche C. Hall and William A. Evans.

MISSISSIPPI

Health Officer Appointed.—The board of supervisors has appointed Dr. William B. Harrison as county health officer of Jones County to succeed Dr. John M. Kittrell, resigned. Dr. Harrison for several years practiced at Belzoni; he was a field representative for the state board of health, and for the last two years has been health officer of Pearl River County.

MISSOURI

Proposal Concerning Insane Criminals.—The Missouri State Medical Association has prepared a bill creating a department of mental diseases, composed of the superintendents of the state hospitals, whose duty it will be to examine all criminals entering the plea of insanity at trial. When this plea is made, the accused is to be referred to the department of mental diseases for examination and is to report to the court. If the accused is acquitted at trial on the ground of insanity, he shall be committed to a state institution for the insane. The new department is also charged with the examining of all inmates of the state penitentiary and the reformatory at least three times each year. Those found insane must be committed to a state institution for the insane. The proposed bill provides for the erection of a new state hospital equipped for the care and treatment of the criminal insane. The bill was drawn by a special committee of the Missouri State Medical Association, and will probably be introduced in the legislature during the session which begins in January.

NEW HAMPSHIRE

Personal.—The selectmen of Grafton, in accordance with the act of the legislature whereby a community may appropriate funds to induce a physician to locate in its midst, recently obtained the services of Dr. Frank A. Mitchell, formerly of Lynn, Mass.

New Hampshire Surgical Club.—At the twenty-ninth annual meeting of the New Hampshire Surgical Club, Hanover, Dr. Eugene B. Eastman, Portsmouth, was elected president for the ensuing year; Dr. Elmer M. Miller, Woodsville, vice president, and Dr. John F. Holmes, Manchester, secretary-treasurer. The president's address was presented by Dr. James B. Woodman, Franklin, on "Focal Infection"; there was a clinic Monday morning at Mary Hitchcock Memorial Hospital, also the annual banquet and scientific session, and the usual week-end outing for members and their families.

NEW YORK

An Old Meeting House.—Dr. Frank Overton, Patchogue, was elected president of the Suffolk County Medical Society at the annual meeting, October 28, and Dr. Edwin P. Kolb, Holtsville, secretary. The society met in the old Griffin House in Riverhead, L. I., where the annual meetings have been held for more than fifty years. Dr. Walter Truslow, Brooklyn, gave an address on "Flat Feet."

Thirteen Hundred Auto Licenses Revoked or Suspended.—The commissioner of motor vehicles, Mr. Charles A. Hartnett, announces that 1,302 automobile licenses were revoked or suspended during the seven day period ending November 16. Among the reasons published for the action were: (1) driving car while intoxicated; (2) leaving scene of accident; (3) reckless driving; (4) false statement in application; (5) switched plates.

Conservation of Vision in Jamestown.—A conservation of vision class has been established by the board of education of Jamestown, following a survey conducted by several organizations. About one child in every 285 in Jamestown's schools had sufficient visual defects to warrant segregation. The survey covered about 7,637 pupils. The board of education sent a teacher to the University of Cincinnati, where there are special courses for teachers in conservation of vision. The class in Jamestown is new in operation. The New York state bulletin to the schools says that Jamestown has taken the leadership for cities of its size in this form of special education.

Directory of Tuberculosis Institutions.—The Tuberculosis Sanatorium Conference of Metropolitan New York has just published a directory of tuberculosis institutions serving New York City which is designed to help physicians and others interested, and is the first of its kind published since 1915. Copies are available, free on request, to physicians in Greater New York; others may secure them for 30 cents each. Copies for those in Manhattan and the Bronx may be obtained from the New York Tuberculosis and Health Association, 244 Madison Avenue; in Brooklyn, from the Brooklyn Tuberculosis and Health Association, 67 Schermerhorn Street, and in Queens, from the Queensboro Tuberculosis and Health Association, 163 Jamaica Avenue, Jamaica, N. Y.

Quack Lucas Arrested.—Alzamon Ira Lucas, the self-styled founder of the sonorously named "American Super Race Foundation" and head of the "Home Betterment Club," is reported to have been arrested recently in Rochester on bench warrants based on nine indictments. Lucas, according to the reports, is charged with practicing medicine without a license, with obtaining the signature of a person to a written instrument with intent to cheat and defraud, and with grand larceny in the second degree. Lucas was practicing quackery on the North Pacific Coast a few years ago and, in 1919, was carrying display advertisements in some theater programs of Portland, Ore. His stunt was alleged spiritual healing. In December, 1914, Lucas was reported to have been convicted in the police court of Seattle and fined $100 for practicing medicine without a license. He appealed, and was again convicted in the superior court, Feb. 11, 1915. Lucas has described himself in some of his advertisements as a "Scientist," "Educator" and "Lecturer" and claimed to be "internationally known by his discoveries in Mental, Psychic and Sex Phenomena."

New York City

Bequests by Dr. Reese.—The will of the late Dr. Robert G. Reese, who died, October 18, which was filed in court, November 13, bequeathed specific bequests of about $600,000, and willed the residue of the estate to the New York Eye and Ear Infirmary for the erection, furnishing and maintenance of a glaucoma pavilion to be known as the Reese Pavilion.

Three Thousand Cases of "Colds"—Annual Report.—In his report to the president of Columbia University, Dr. William H. McCastline, the medical officer, states that the health of the university community was satisfactory during the last year. There were no epidemics, and a better state of health than in the city as a whole was enjoyed. The university medical officers gave, during the year, nearly 23,000 treatments. The common cold was the cause of more illness than any other disease, there being 3,337 cases. There were 2,559 cases of pharyngitis and 1,216 disturbances of the sinuses of the head; 430 cases of tonsillitis, 854 cases of influenza and 1,103 of various other types of infection were reported. The infirmary for men was moved this fall to the John Jay Hall, the new undergraduate center at Amsterdam Avenue and One Hundred and Fourteenth Street, and was equipped to care for the 1,500 men residents on South Field.

Society News.—Dr. Charles G. Kerley addressed the Medical Society of the County of Kings, November 16, on "Observation on Cretinism with Lantern Demonstrations," and Dr. Charles A. Weymuller on "Acidosis in Children: Some Phases of Its Mechanism and Relief."——Dr. Augustus L. Harris was elected president of the Brooklyn Urological Society, October 9, and Dr. George H. Palmer, secretary-treasurer.——Dr. Franz Nagelschmidt, Berlin, will be the guest of honor at a dinner, December 3, given by the American Electrotherapeutic Association and the New York York Electrotherapeutic Society, Hotel Pennsylvania.——The Physicians Square Club of Greater New York will hold its second annual dinner and ball, Hotel Astor, December 5. Medical friends of members may obtain tickets ($6) from the secretary of the committee, Dr. Joseph J. Rosenberg, 120 East Eighty-Sixth Street.——The Medical Society of the County of New York has moved its offices to the new building of the Academy of Medicine, Fifth Avenue and One Hundred and Third Street.

NORTH CAROLINA

Decrease in Death Rate.—The U. S. Department of Commerce announces that the death rate in North Carolina was 11.58 per thousand population in 1925, as compared with 12.21 in 1924. The decrease is partially accounted for by decreases in pneumonia, whooping cough and measles. There

were increases in the death rates from influenza, pellagra, nephritis and mild accidents.

Personal.—Dr. Thomas E. Tucker, health officer of Edgecomb County, resigned, October 15, to accept a similar position in Jackson County, Ala., with headquarters at Scottsboro.——Dr. Margery J. Lord has been appointed school physician for Asheville on a full-time basis.——Dr. W. Clinton Linville has been appointed acting superintendent of the state hospital for colored insane, Goldsboro, pending an election of a superintendent by the board to succeed the late Dr. William W. Faison.

Hospital News.—The city of Gastonia and the Gaston County commissioners have provided a budget of $4,000 annually for a ten bed addition to the local hospital for negro tuberculosis patients.——Mr. Fred L. Seely, Asheville, has donated to the Mission Hospital of that city $6,000 for the purchase of a new roentgen-ray outfit in memory of his family physician.——The Watts Hospital, Durham, has contracted for an addition, which will contain fifty-five rooms and cost $172,000.——A fourteen bed county tuberculosis sanatorium will be opened shortly in Vance County and will be known as the Scott Parker Sanitarium, in honor of the father of Mrs. S. T. Peace who provided the building. The county provided the site and the plumbing.

OHIO

Legal Note.—The Court of Common Pleas of Cuyhoga County recently sustained the right of the Cleveland Department of Health to prohibit alleged unfit milk from entering the city.

Director of Laboratories Appointed.—Dr. Bernhard S. Steinberg of the department of pathology, Western Reserve University School of Medicine, Cleveland, and for the last year Crile Research Fellow, has been appointed director of research and laboratories at the Toledo Hospital, Toledo, and will take up his new duties, January 1.

Society News.—Dr. John H. J. Upham, Columbus, a trustee of the American Medical Association, addressed the Five-County Medical Society, at Hillsboro, recently, on "Public Policy," and Dr. Eugene F. McCampbell, Columbus, on "The Heart."——At a meeting of the Academy of Medicine of Cincinnati, November 8, Veterans' Memorial Headquarters, 320 Broadway, Dr. William De W. Andrus discussed "Jejunostomy in Intestinal Obstruction and Peritonitis."——The Summit County Medical Society has organized a "medical relief corps" with its president, Dr. Carl R. Steinke, in command, and its secretary, Dr. Alexander S. McCormick as adjutant. The officers of the One Hundred and Twelfth medical regiment comprise the field force, with Major Richard E. Amos in command.

Madam Clay in Court.—Madam Belle Clay, colored, 869 Yondota Street, Toledo, was tried in the muncipal court, October 9, it is reported, for practicing medicine without a license, and was fined $500 and costs. Several women testified that the defendant had tried to cure them by prayer, after being assured that they first dismissed their regular physicians. Belle's treatment featured also the use of oils, balsams, and offerings of coin. She asserted that she was never molested in Tennessee, and that as far as she knew the two states were the same. The state medical journal says that Madam Clay's "countenance bore that celestial look of the very naive which the colloquial mortal would vulgarly classify as 'dumb.'" The judge said, in passing sentence, that "to practice medicine, men and women spent years of their lives and thousands of dollars for an education. We cannot countenance the healing art vested in the ignorant and avaricious."

PENNSYLVANIA

Society News.—Dr. Joseph Sailer, Philadelphia, addressed the Allegheny County Medical Society, Pittsburgh, November 16, on "Some Newer Methods of Blood Examination"; Dr. Moses H. Baker, on "Transfusion"; Dr. Joseph W. McMeans, Jr., on "Blood Stream Infection," and Dr. Robert M. Entwistle, on "Control of Hemorrhage."——Dr. James L. Foster, Boston, addressed the Pittsburgh Pediatric Society, November 19, on "Hirschsprung's Disease with Presentation of a Case."

Philadelphia

Hospital News.—At a dinner of about 500 workers at the Benjamin Franklin Hotel, October 25, a drive for $100,000 was organized to meet the needs of the Northern Liberties Hospital. The bed capacity now is sixty-five but the hospital is caring for about 100 patients.

Symposium on Goiter.—Drs. Henry S. Plummer and John de J. Pemberton, Mayo Clinic, Rochester, Minn., conducted a symposium on goiter before the Philadelphia County Medical Society, November 10, their subjects being "Exophthalmic Goiter and Hyperfunctioning Adenomatous Goiter" and "Present Day Problems of Surgery of the Thyroid," respectively. The discussion was opened by Dr. Frank H. Lahey, Boston, and Dr. Harold L. Foss, Danville.

New Eagleville Hospital.—Officials of the Eagleville Sanitarium are planning to erect a new $500,000 hospital at Eagleville, which will have a capacity of sixty-two beds, an operating suite, heliotherapy department, laboratory facilities, and probably will be completed next summer. The sanatorium headquarters now are at the Northern Liberties Hospital, 808 North Seventh Street, where applications for admission should be sent. The sanatorium, since 1919, maintained its beds at the Henry Phipps Institute and just recently vacated that position in order to give the University of Pennsylvania the use of the entire building.

SOUTH CAROLINA

Another Circulating Library.—The faculty of the Medical College of the State of South Carolina announces that the privilege of borrowing periodicals and other publications on file in the college library is now extended to all legally qualified members of the medical profession of the state, subject to certain restrictions. The physician must pay postage both ways. Material will be loaned as a rule for not more than ten days and security must be given to the value of the material loaned. Requests for loans from the library should be addressed to the librarian, Medical College of the State of South Carolina, Charleston.

TENNESSEE

Personal.—Dr. Augustus A. Oliver has been elected health officer of the city of Paris, succeeding the late Dr. Armistead H. Miller.

Decrease in Death Rate.—The death rate in Tennessee in 1925, according to the U. S. Department of Commerce, was 11.37 per thousand population, as compared with 11.62 in 1924. The decrease was accounted for by the death rates for pneumonia, tuberculosis, whooping cough and measles. There were increases in 1925 in the death rates for influenza, pellagra and nephritis.

Investigation of Dyersburg Epidemic.—The state health department has found that the epidemic of about 150 cases of gastro-enteritis at Dyersburg, September 4-7, was due to the group of organisms which include the bacillus of Gärtner and *Bacillus paratyphosus* B. The cases investigated were traced to milk from one dairy, and some to milk drinks containing whipped cream at the only drug store that was supplied from this dairy. The outbreak was probably limited to persons exposed to the morning supply of milk, September 4. The victims were suddenly seized with extreme prostration and other symptoms of gastro-intestinal disturbance, some having a temperature of 105. The local health department quickly traced the source and immediately took steps to prevent further cases. Some factors in the epidemic have not yet been cleared up. Sufficient is known to say that this epidemic shows the necessity for regular and systematic control of milk supplies.

VIRGINIA

Dr. Brown Resigns.—Dr. Alexander G. Brown, Jr., Richmond, has resigned from the faculty of the Medical College of Virginia after about twenty-five years of service as a teacher in that school. Dr. Brown will devote his entire time to practice.

Society News.—Dr. Herbert R. Drewry, Norfolk, has been elected president for the ensuing year of the Association of Surgeons of the Norfolk and Western Railway.——The South Piedmont Medical Society held a symposium on diseases of childhood, November 16; Drs. Dwight G. Rivers, Don P. Peters, Bernard H. Kyle, Lynchburg, and Dr. Lawrence T. Royster, University, being the speakers.

Personal.—Dr. Alvah Stone was elected president of the Roanoke Academy of Medicine, October 4.——At the semi-annual meeting of the Northern Neck Medical Society, Kilmarnock, October 28, Dr. Henry J. Edmonds, Jr., was elected president.——Dr. John M. Bailey has been appointed health officer of Brunswick County to succeed Dr. Lunsford H. Lewis, who resigned to accept a position at Kingswood, W. Va.——

Dr. and Mrs. Adrian Baldwin, North Fork, celebrated their forty-sixth wedding anniversary, October 27, and Dr. and Mrs. Tremain E. Armstrong, City Point, celebrated their silver wedding anniversary, October 30, with a reception at the Dupont Club.

WASHINGTON

Society News.—Dr. Charles C. Tiffin, Seattle, addressed the Lincoln County Medical Society, Davenport, October 3, on "Association of the Pathologic and Clinical Findings of the Different Types of Goiter."——The King County Medical Society, Seattle, gave a dinner dance at the Inglewood Golf Club, November 12; Dr. Leonard H. Jacobsen addressed the society, November 1, on "Early Syphilis and Its Treatment," and Dr. Cassius H. Hofrichter, October 4, on "Observations in Disturbed Glucose Metabolism with Etiologic Significance," illustrated.

Health Publicity Drive.—Plans are being made, says the *Public Health League Messenger*, for 1,000 health talks before "75,000 community leaders in Washington," during the year 1927, in a proposed campaign for public health. The plan involves that every club in the state—luncheon clubs, fraternal orders, chambers of commerce, etc.—shall have at least two health meetings in the year. A list of available speakers will be given to every club in the state with the subjects available, so officers may determine what they want discussed and whom they want to hear. A blank will be issued to every physician in the state, whereon he may indicate his willingness to speak and his subjects. Thus, every physician will be given an opportunity to render assistance in the public health drive.

Presidential Medical Caravans.—The president of the state medical society, Dr. H. G. Willard, Tacoma, seems to be introducing the "medical caravan idea" into his administration with success. He bundles up a crowd of state medical officials or other prominent physicians into one or more automobiles and takes them off with him to county medical society meetings throughout the state. Trips have been made to Chehalis, Palouse and Wenatchee, some involving a ride of more than a hundred miles. There were fifteen physicians in the party that visited the Lewis County society, October 11, which the county president said made it just "like a session of the Washington State Medical Association." Among the visitors there were Drs. A. O. Loe, Seattle; H. L. Hull, Elma; C. D. Hunter, Tacoma; Charles R. Castlen and George Miller, Seattle, and William N. Keller, Tacoma. The scientific address was presented by Dr. William C. Speidel, Seattle, on "Blood Transfusion."

WEST VIRGINIA

Society News.—The Ohio County Medical Society held a symposium in October on the toxin-antitoxin campaign against diphtheria; the speakers were Drs. William H. McLain, Charles H. Keesor and Delivan A. MacGregor; Dr. William F. Rienhoff, Jr., Baltimore, addressed the society, October 8, on "Hyperthyroidism and Its Relation to Some of the Benign Tumors of the Thyroid Gland."——The house of delegates of the state medical society at the last annual meeting authorized the president to appoint a committee on a permanent home, and the following have been appointed to look into the feasibility of the project: Drs. William P. Black, Charleston; Lewis V. Guthrie, Huntington; Charles O. Henry, Fairmont; Edward L. Armbrecht, Wheeling, and Wilkin B. Stevens, Eckman.

WISCONSIN

Personal.—Dr. Judson A. Palmer, Arcadia, has been promoted to the rank of lieutenant colonel, medical officers' reserve corps.——The will of the late Dr. John G. Meachem, Racine, bequeaths the annual income from $170,000 to the St. Luke's Hospital of that city.

Society News.—The Waukesha County Medical Society held a special meeting, October 6, in honor of Dr. Arthur W. Rogers, president-elect of the state medical society. There was a reception followed by a business meeting, bridge party and music.——Dr. William J. Mayo, Rochester, Minn., held a surgical clinic before the Tenth Councilor District Medical Society, Sacred Heart Hospital, Eau Claire, October 5; Dr. Solon Marx White, Minneapolis, held a medical clinic and Dr. William H. Condit, a gynecologic clinic.—— At the Eleventh Councilor Medical Society meeting, there was a demonstration of the use of iodized oil in diagnosis and treatment of pulmonary diseases by Dr. Edward W. Alton Ochsner of the University of Wisconsin Medical School. Dr. George J. Hathaway, Superior, was elected president, and Dr. Adellon P. Andrus, Ashland, secretary. ——Dr. Richard L. Bower, Madison, addressed the Jefferson County Medical Society, October 7, Fort Atkinson, on "Newer Phases of Bronchoscopy."——Dr. Karl W. Doege addressed the Marathon County Medical Society, October 19, on "Surgery of the Spleen."

GENERAL

Automobile Fatalities Increase.—During the four weeks ending November 6, automobile accidents caused 676 deaths in seventy-eight large cities of the United States, compared with 612 deaths during the preceding four weeks. The lowest number of deaths for four week periods since May, 1925, was that ending March 27, 1926, when the total number of deaths was 350. For the period ending November 6, five cities reported no fatalities, while for the corresponding period last year, three cities reported no fatalities.

Federal Government to Examine Live Poultry.—As a result of a survey of live poultry in New York City in August, the U. S. Department of Agriculture has agreed to inspect live poultry in conjunction with the board of health regulations. The department of agriculture will license inspectors, and they will be financed by the New York Poultry Commission Merchants Association and the Greater New York Live Poultry Chamber of Commerce. The fees for the inspection will be fixed by the secretary of agriculture, and the work will be conducted in line with the sanitary code of the New York City Board of Health, and the public health laws of the states of New York and New Jersey.

Bequests and Donations.—The following bequests and donations have been announced recently:

Mount Sinai Hospital, $5,000; Lebanon Hospital, $2,500; Hospital for Joint Diseases, $1,000. all of New York, by the will of Harry Mayer.

St. Luke's Hospital, New York, $15,000, by the will of the late Miss Margaret Hind.

The Woman's Hospital, St. Luke's Hospital, Long Island College Hospital and Presbyterian Hospital, all of New York, will each receive $50,000 under the will of the late Mrs. Marion Prentice Brookman.

Beth Abraham Home for Incurables, $1,500; Montefiore Home, $500; Hospital for Joint Diseases, $250, all of New York, by the will of Montague Aaron.

New York Orthopedic Dispensary and Hospital and Woman's Hospital, New York, each $10,000, by the will of Louise H. Vanderbilt.

St. Vincent's and Bridgeport hospitals, Connecticut, each $15,000, by the will of the late Frederick D. Baker.

All Souls Hospital, Morristown, N. J.; Servants of Relief for Incurable Cancer, New York, each $3,000, by the will of Bernhard F. Coleman.

St. Luke's Hospital and the Children's Memorial Hospital, Chicago, each $15,000, and the Visiting Nurses Association, Chicago, $10,000 by the will of the late John A. Spoor, Chicago.

The Prospect Heights Hospital, Brooklyn, New York, $3,000 by the will of Mary A. Carman.

The Methodist Episcopal Hospital, Philadelphia, practically all of the estate of the late Frank Stack, Ocean Grove, N. J., estimated at about $43,000.

The Episcopal Hospital, Philadelphia, $5,000, by the will of the late James Stoney.

The New York Hospital, New York, $5,000, by the will of the late Mrs. Theresa R. Irving.

Supply of Medicinal Liquor Runs Low.—Assistant Secretary of the Treasury Lincoln C. Andrews announced, November 15, that it would be necessary for Congress to enact legislation at the coming session to replenish the country's supply of medicinal liquor. He said that there are about 15,000,000 gallons of whisky under government control in the thirty-seven concentration warehouses, and that the average consumption of medicinal whisky during the last three years has been between two and three million gallons. New stocks of whisky must be immediately created, it appears, to allow for the necessary aging process. The treasury department will present a bill to Congress designed to overcome this emergency, and to provide a plan for the manufacture of a new supply. There has been no whisky distilled legally since late in 1921, when the Willis-Campbell beer bill was enacted stopping all distillation except that of alcohol for industrial purposes. Provision was made then for renewal of distilling for the replenishment of supplies, but these provisions are said to be difficult to administer. Mr. Andrews considers, therefore, that the better course would be to have explicit authority from Congress which will set out the exact methods and the amounts of liquor to be distilled. He will urge, it is reported, the establishment of a private corporation, under government control, to provide and distribute all medicinal liquor. The adoption of such a plan would be in harmony with the recommendation of the House of Delegates of the American Medical Association in 1922, when it urged that provision be made for supplying bonded whisky, for medicinal use only, at a fixed price to be established by the government.

FOREIGN

Gift to Australian Medical Journal.—Sir Joseph Verco has endowed the *Australian Journal of Experimental Biology and Medical Science* with a gift of £5,000. This sum will be held in trust by the University of Adelaide and the income devoted to sustaining the journal, which will become the property of the university.

Scarlet Fever in Poland.—There has been a recrudescence of scarlet fever in Poland, 3,526 cases having been reported during the four weeks ending September 4, as against 1,634 cases reported in the corresponding period last year. The increase began in August, and at the end of that month was higher than at any time in the preceding four years.

Egypt to Propagandize Sanitation.—The Egyptian Ministry of the Interior is plannning to show through the provinces and villages moving pictures about sanitation and health in a way which the peasants will understand. The films will be taken from place to place in motor cars, accompanied by public health officers, who will explain the precautions to take to avoid infection, and how to prolong life by means of better sanitation.

Personal.—At the annual meeting of the Royal College of Physicians of Ireland, recently, Dr. Thomas H. Wilson was elected president and Dr. Bethel Solomons, vice president. ——Prof. G. Elliott Smith delivered the Thomas Vicary Lecture before the Royal College of Surgeons of England, November 4, on "The Significance of Anatomy," and Dr. Ernest W. Hey Groves, November 11, delivered the Bradshaw Lecture on "Reconstructive Surgery of the Hip Joint."

Government Subsidy for Research Work.—The department of education of Japan announces that for the present fiscal year 65,000 yen will be awarded in government subsidies for research work. The sum appropriated will be distributed among 170 research workers, of whom seventy-seven are concerned with medical and allied subjects. Prof. K. Aoki's subject for research work is "Immunologic Identity of Bacilli"; Prof. A. Imamura, "The Efficacy of Tuberculosis Vaccine"; Prof. T. Nagayama, "Studies on Vitamin"; Dr. S. Hosoya, "Relation Between Micro-Organisms and Vitamins."

International Obstetrical Congress in Dublin.—The International Gynecological and Obstetrical Congress, held in Dublin in September, the first of its kind ever held in that city, was successful and of great importance to the medical profession. It was a part of the Coombe Lying-In Hospital centenary. The papers read at the congress by leading teachers of the world have been collected for publication and will be published uniform with the *Irish Journal of Medical Science.* Persons desiring to obtain the proceedings of the congress should address the *Irish Journal of Medical Science,* Parkgate Printing Works, Dublin, Ireland, enclosing a check or money order for five shillings and sixpence, including postage.

Society News.—The second Oriental Red Cross Conference was held in Tokyo, November 15-23, under the auspices of the League of Red Cross Societies; nine countries in the orient was represented by 100 delegates; John Barton Payne represented the United States. The conference discussed disaster relief, health and nursing questions. There were excursions to Kamakura and to Nikko.——Dr. Kwanzo Okada addressed the Dairen Dermatologic Society, August 5, at the Dairen Hospital on "A Case of Dermatitis Caused by a Kind of Onion, 'Ninniku'"; Dr. Naoto Yasutomi addressed the Japan Otorhinolaryngologic Society, August 18, at the Osaka Medical College on "Fibrillation of Adam's Apple."

Medical Society of London.—The new president, Sir Humphry Rolleston, presented the Fothergillian Medal to Sir Frederick G. Hopkins, professor of biochemistry, University of Cambridge, at the annual meeting, October 11. The annual oration was delivered by Sir Berkeley Moynihan, president, Royal College of Surgeons of England, whose subject was "Before and After Operation." The Lettsomian Lectures will be delivered by Mr. Donald Armour on "Surgery of the Spinal Cord and Membranes"; Dr. John Parkinson and Mr. A. J. Walton addressed the society, November 8, on "Sternal Pain"; Dr. Clive Riviere and Mr. J. E. H. Roberts, November 22, on "Advances in the Treatment and Diagnosis of Bronchietasis;" Drs. J. D. Rolleston and R. A. O'Brien will address the society, December 13, on "Advances in Etiology, Diagnosis, Prophylaxis and Treatment of the Exanthemata."

Government Services

Surgeon General's Recommendations for the Medical Corps

A reorganization of the army medical department has been recommended by Major General Merritte W. Ireland to the secretary of war. The principal specific recommendations include: three additional brigadier generals in the medical department; adoption of allowances for the various component corps of the department; increased relative rank for members of the nurses corps; reorganization and expansion of the medical administrative corps with a change in its name to the medical auxiliary corps; revision of law to secure longevity pay to officers of the veterinary corps; increase of the medical department personnel by 335 medical officers, 113 dental officers, 60 veterinary officers, 35 auxilary officers and 2,050 enlisted men; provision for the rank, pay and allowances of a brigadier general of the medical department in the case of any medical officer of the army on duty as White House physician. In the case of a medical officer being assigned to duty at the White House, the Surgeon General recommends that as this is a temporary appointment it should not be counted against the allowance of general officers contemplated by the reorganization measure.

Hospitals for Veterans

The director of the U. S. Veterans' Bureau, Gen. Frank T. Hines, in an address before the annual convention of the American Legion, said, it is reported, that during the fiscal year 1925 the beds in permanent government-owned hospitals increased by nearly 1,700, and beds in temporary structures decreased by 900 during this time, and in hospitals that were leased decreased by 800 beds. The government facilities for neuropsychiatric patients increased about 500 beds and the facilities for tuberculosis and general medical cases decreased slightly. Now less than 13 per cent of all Veterans' Bureau patients are in contract hospitals, but of these 70 per cent are insane. The bureau has under construction at the present time four major projects, including the neuropsychiatric hospital at Northport, L. I., the General Hospital at Fort Snelling, Minn., and the large additions for neuropsychiatric patients at Palo Alto, Calif., and North Chicago, Ill. New hospitals will be erected in Portland, Ore., and Tucson, Ariz., providing for general tuberculosis and neuropsychiatric patients at the earliest practicable date. The bureau is planning to construct a hospital at Alexandria, La., to replace the cantonment structures there. The title to the site at Fargo, N. D., has been found acceptable and this property is being purchased for the construction of a combined Veterans' Bureau hospital and regional office facilities. The bureau is endeavoring to establish clear title to the property it desires to purchase at Bedford, Mass., and when accomplished structures will be erected to furnish 250 additional neuropsychiatric beds for New England. The total value of these hospital projects now under construction or being definitely planned represents an investment of about $13,000,000.

Veterans' Bureau Personals

The U. S. Veterans' Bureau in a recent announcement notes the following changes in medical personnel: Dr. William J. Bott, resigned at Hospital No. 98, Castle Point, N. Y., October 26; Dr. James M. Ernest, transferred to Regional Office, Portland, Ore., October 16; Dr. Joseph F. Hamilton, resigned at Hospital No. 88, Memphis, Tenn., October 31; Dr. Herman S. Hoffman, resigned at Hospital No. 32, Washington, D. C., October 15; Dr. Emry G. Hyatt, resigned at Hospital No. 93, Legion, Texas, November 1; Dr. Louis A. Mangan, resigned at Hospital No. 101, St. Cloud, Minn., October 20; Dr. Harlan E. Mize, transferred to Edward Hines, Jr., Hospital, Maywood, Ill., October 16; Dr. Harry E. Levit, resigned at Hospital, Tupper Lake, N. Y., October 31; Dr. George W. Phillips, transferred to Hospital No. 68, Minneapolis, November 1; Dr. Robert L. Russell, transferred to Hospital No. 55, Fort Bayard, N. M., November 1; Dr. William A. Smith, appointed as pathologist at Hospital No. 79, Outwood, Ky., October 13; Dr. Hugo D. Stites, resigned at Hospital No. 90, Muskogee, Okla., October 10; Dr. John P. Wheeler, transferred to Regional Office Sioux Falls, S. D., November 1; Dr. Harry R. Adams, resigned at Hospital No. 59, Tacoma, Wash., August 3; Dr. Winthrop Adams, promoted to medical executive officer, medical service, central office, August 9; Dr. William C. Bennett, resigned at Hospital No. 80, Fort Lyon, Colo., September 8.

Foreign Letters

LONDON

(From Our Regular Correspondent)

Nov. 6, 1926.

Medicated Wine Held to Be an "Intoxicating Liquor"

A preparation named "Wincarnis," advertised to consist of wine and meat extract and extensively sold as a "patent medicine," has come under the ban of the revenue authorities. The case arose over its sale by a pharmacist who did not hold a license entitling him to be a retailer of intoxicating liquor. The magistrates held that by this omission he had committed an offense; they fined him $5 and ordered him to pay the analyst's fee. The point was reviewed by the high court, and the decision was upheld. The magistrates had found that the liquid was an intoxicating liquor, was medicated, and tasted of quinine. The high court had only to consider whether there were materials whereon the magistrates could reach the conclusion which they in fact reached, that this liquid was wine. The court was satisfied that there were. The advertisements on the wrapper bore statements that it was "made with choice wine," "contains one grain of quinine to the ounce to meet the requirements of the Board of Inland Revenue," "contains 28 per cent of proof spirit," and advised that the bottle should not be shaken "as there is occasionally a little sediment from the wine after bottling." All these matters were *prima facie* evidence that the liquid was made with wine. The analysis showed 27.99 per cent proof spirit (equal to 13.99 per cent of alcohol) and 1 9/10 grain of quinine to the fluidounce. The British pharmacopeia was quoted as showing that a mixture containing 1 or more grains of quinine per fluidounce was considered a medicine, and a good port wine was stated to contain 30 per cent of proof spirit. On the appeal it was argued for the pharmacist that the true test was palatability. The liquid, as the magistrates said, "tasted of quinine," and quinine is bitter and unpleasant to the palate. It was answered that there are recognized beverages of which quinine is an ingredient. The lord chief justice observed that it was a question of degree. How much quinine is necessary to make wine cease to be wine? At one end of the scale a man might put a very little medicine of a pleasant taste into a large quantity of good wine; at the other end he might put a large quantity of nasty medicine into a small quantity of indifferent wine. The magistrates in effect said that the liquid was wine, and there was no ground for upsetting their finding. The commercial problem, the lord chief justice said, was how to put enough medicine into the wine to make it cease to be wine for the purpose of argument, and at the same time not make it unpalatable to those who would drink it—especially those women who thought they suffered from nervous disorders and wanted an excuse for drinking port.

Sir William Arbuthnot Lane's Health Propaganda

Under the caption "Lessons from Savages," Lane continues his series of articles in the *Daily Mail* (THE JOURNAL, November 13, p. 1658). He points out that Alexis Carrel in his experiments at the Rockefeller Institute, New York, on the growing of living tissues, found it necessary not only to supply the juice of living tissues as food but also to wash his preparations daily to remove the products of digestion by the cells. If drainage of these products was effected at insufficiently short intervals, the cells waned in vitality and size. Lane then quotes Hippocrates as stating that any departure from the habits of life in man or other animal as the result of civilization ends sooner or later in disaster. He describes the human infant as normally defecating after every feeding and the cutting short of this beneficent habit by the mother, reducing it to a single evacuation at a certain time of the day; hence "overdistention of the end of the larger bowel and damming up of poisonous material" with disastrous effects on health. In his next article, headed "A Crying Need of School Life," he indicts the lavatory arrangements in nearly all private and public schools as "lamentably defective," in some so bad as "to amount to criminal neglect." He says, "The time which should be spent in attending to what is the most vital of all functions is sacrificed to being present at divine service." In one public school the lavatory accommodations were so inadequate that calculation revealed the astounding fact that the average time available per boy was thirteen seconds a day. Many adults also suffer in health from defective sanitary arrangements, particularly nurses in hospitals. Thus our civilization entails a vast amount of ill health and disease, a huge proportion of which can be prevented by proper food and by good habits.

Lane's lurid descriptions and dogmatic teaching certainly leave nothing to be desired by the lay editor who does not want the writer who is "overcautious" but the sensational one who impresses the uninstructed and casual reader. But this is scarcely science. It may be freely admitted that Lane has put his finger on detrimental habits the result of civilization which, though by no means previously unknown, receive very insufficient attention. But has he established his sweeping conclusions? Is not the passage from the evacuation after every feeding of the infant to the one evacuation at a fixed time daily only the development of control, which is the essence of all evolution, and have not the great majority of mankind acquired this habit without the slightest evidence of ill effect? Further, is it a practicable suggestion to tell people to evacuate after every meal? Again, is the savage, whom Lane is always extolling, such an example of physical perfection and health as he claims? Is he not liable to disease like the civilized man and does he not age more rapidly than the latter? Finally, Lane has not yet proposed to abolish civilization and until that day man must continue to pay a certain price for the new conditions to which he can become perfectly adapted only in time. One may admit that in the prevalent use of white bread, polished rice and other products of civilization we have gone wrong and unnecessarily pay the penalty. Lane is a very able man but is not free from the tendency of doctrinaires to become overenthusiastic and push their views too far.

Ruinous Sickness Benefit Under the Panel System

It was stated at a recent conference of panel physicians that at the beginning of next year the government would probably decide to proceed with the recommendations in the report of the royal commission on national health insurance, and to present a bill, one of the features of which would be the establishment of a consultant service. Doubts were, however, cast on the possibility of paying for this consultant service, because there has been, in recent months, a "tremendous increase in sickness benefit." Sir Walter Kinnear (controller, insurance department, ministry of health) addressed the conference and submitted figures showing how great this increase has been. He said that "at the present moment the ministry was considering the commission's report and the preparation of a draft bill, and very shortly it would have to decide whether to include in the draft bill a provision for this new specialist service." A specialist service would cost about $7,500,000 a year. The figures given to the conference showed that since the industrial upheaval of last May the sickness experienced had been in excess of the normal. So large was this excess, especially in certain parts of the country, that it threatened to place the provision of a specialist service in jeopardy. The approved societies were

alarmed at the position, so much so that he had been asked to summon a meeting of the consultative council of approved societies. The first suggestion before that body, when it met, was that he should be asked to approach the profession with a request that the arrangements as regards immediate transfer from one physician to another, which was made two or three years ago, might be altered, and a time limit of three or six months imposed. The facility of immediate transfer was undoubtedly a factor in the present position. The meaning of this is that the panel physician is influenced by the fear of immediate loss of the patient from his list if he refuses a certificate of disability. Sir Walter Kinnear read an extract from the *Insurance Gazette* citing the case of two men certified as unfit for work, one of whom won a race at the local sports meeting and the other won a boxing competition. The approved societies, he said, had during the past three months been sending cases to the medical referees at three times the average rate. There was, in certain parts of the country, a "sagging down on the question of medical certification." In a previous letter (THE JOURNAL, September 18, p. 952) unjustified claims for sick benefit by those unemployed in consequence of the coal strike, and the laxity of panel physicians in granting them, were described.

Sunlight and Milch Cows

At the Rowett Research Institute, Aberdeen University, problems connected with the mineral metabolism of farm animals had been investigated. Research in connection with the influence of ultraviolet rays on the health and growth of farm animals had been extended in regard to their effect on the milk and metabolism of lactating animals. It had been found that irradiation exerted its maximal effect on growing animals when, as a result of a badly balanced ration or from other causes, the retention of minerals was low. Experiments with lactating goats had shown that irradiation of the lactating animal decreased the loss of calcium and phosphorus from the body, and might even convert a loss into a gain. No immediate marked effect on milk yield had been observed. However, in the light of the results of other experimental work on cows, it was believed that the prevention of loss of calcium and phosphorus from the body during lactation would increase the period of maximal yield of milk and safeguard the health of the heavy-milking animal. The results pointed to the importance of exposing milch cows as much as possible to direct sunlight. They also indicated that irradiation of cows with artificially produced ultraviolet rays during the winter months might become a practical and profitable procedure.

Medical Supervision of Ultraviolet Ray Treatment Insisted On

The question whether ultraviolet ray treatment should be given at a massage establishment without medical direction was considered by the public control committee of the London county council. A man carrying on a "sunlight institute" applied for a license to enable him to give ultraviolet ray treatment. The public health department considered that as neither the applicant nor his wife, who assisted him in the business, had any medical qualification, the license should be granted on condition that ultraviolet ray treatment was given only under medical supervision. The applicant declined to accept this offer, and explained that he did so on the ground that people came for treatment for quite small ailments on which they would not seek medical advice. If a case seemed at all serious he would refuse to treat the patient except on a physician's prescription. The chairman said the decision of the committee was that the license should be granted only on condition that the applicant should provide medical supervision.

PARIS

(From Our Regular Correspondent)

Oct. 27, 1926.

Predisposition to Convulsions in the Child

A work by Dr. André Collin, which deals with convulsions in the child, was published the same day that its author died. At the time of his death, he was a professor at the Ecole des hautes études sociales. He had devoted the period of his scientific activity, up to the time of his death at the age of 47, to the study of the neuropathology of the child, and, more particularly, to mental development. Some of his chief works are: "Les enfants nerveux," "Le développement de l'enfant," and, above all, "Un traité de médecine légale infantile." The last mentioned publication was prepared in collaboration with Judge Rollet, who was, in France, the founder of the juvenile courts.

The last work from Dr. Collin's pen endeavors to establish, on the basis of physiologic and histologic research, that the interstitial substance of the brain of the child delays the connections between its nerve cells. The medullary reflexes develop early, but the cerebral control of these reflexes is established only gradually. This explains why in the child reflex convulsions are induced by simple causes, such as digestive disturbances or teething. As cerebral control becomes more established, the predisposition to convulsions is less manifest. If there is a delay in the establishment of control, children retain the predisposition to convulsions longer than is usual. The most common causes for such delay are psychic and nervous defects of hereditary origin and various other hereditary defects (alcoholism, syphilis, arthritis, chronic intoxications in the parents), together with calcium deficiency. Tetany is often mistaken for ordinary convulsions. Epilepsy may appear in childhood and is a grave misfortune for the future of the child. Epilepsy is only rarely hereditary, but it appears as a nervous equivalent in subjects with many hereditary defects, which reveal themselves by other nervous or psychic manifestations in relatives, or by alcoholism, syphilis or chronic intoxications. In case of doubt as to the cause, the treatment of convulsions in the child, in addition to the emergency treatment at the time of the attacks, may well consist of the administration of calcium to combat tetany, and of bromides to combat epilepsy.

The Thirteenth French Congress of Hygiene

The thirteenth French Congress of Hygiene, organized by the Société de médecine publique, was held, Oct. 19-22, 1926, in Paris, at the Pasteur Institute, under the chairmanship of M. Henri Martel, director of the sanitary veterinary services. This congress, which is held every year in Paris at the Pasteur Institute, brings together the professional hygienists, including all the departmental health officers and the directors of the public health services in the large cities. Three main topics were on the program: (1) immigration; (2) the rôle of health officers and of directors of the public health services in the antituberculosis crusade, and (3) the preservation of foodstuffs by refrigeration.

The paper on immigration was presented by Dr. Dequidt, inspector general, and Dr. Forestier, public health officer. Since the war, the main transoceanic currents of migration have been modified by the measures adopted by the United States, the British Dominions, and the South American countries, as a protection against the immigration of hordes of foreign laborers. Today France, next to the United States, admits the largest number of immigrants. In order to meet the changed situation, France should inaugurate an immigration policy which would place it in a position to cope effectively with the emigration policies of labor-exporting countries. The indications for such an immigration policy

are: (1) the elimination of the sick; (2) refusal of admittance to those who are likely to become ill; (3) a selective process, favoring the most assimilable types, and the erection of a barrier against those races that are the products of entirely different civilizations. Assimilation must precede naturalization.

Dr. A. Martial referred in his paper to the example of the United States in requiring immigrants on their arrival to submit to a health examination. France has not done much as yet in the way of health examinations at the frontiers. Private interests, however, have at least provided lodgings for foreign labor. Dr. Armand Delille discussed the medical examination service as applied to repatriated civilians at Evian during the last year of the war. Dr. Montagnol of Valence (Drôme) and Madame Daumezon of Narbonne (Aude) gave accounts of their observations in the bureaus of health of which they are the directors. Professors Spillmann and S. Parisot pointed out that, in the department of Meurthe-et-Moselle, the number of cases of primary syphilis observed among foreigners constituted at least one third of the total number of dispensary cases. In their opinion, the following measures should be adopted as soon as possible: (1) reorganization and equipment of health examination centers; (2) creation of industrial dispensaries of social hygiene; (3) close cooperation between the dispensaries; (4) deportation of every workman who cannot pass a satisfactory health examination, and (5) establishment of a sanitary record book which the immigrant must retain in his possession. The question of immigration with relation to the prophylaxis of venereal disease was treated by Professor Spillmann and Dr. Cavaillon. Dr. Ichok contended that by international understanding foreign workmen who contract a disease in connection with labor for which they have been hired should be protected by the workmen's compensation law.

On the question of tuberculosis, Dr. Guillemin, director of the bureau of public health in La Rochelle, recalled the fact that one Frenchman dies of tuberculosis every five minutes, and stressed the fact that under the present plan there is lack of cooperation. He recommended therefore better organization of effort among public welfare societies, on the one hand, and the official representatives of the public health service on the other. Speaking along the same line, Dr. Ott, departmental health officer, suggested that, whatever form the antituberculosis crusade may take in a given department of France, the departmental health officer should be, ex officio, a member of the governing, the administrative or the supervisory council. From many sources came reports of good results from antituberculosis inoculation by the Calmette method and from the activities of the visiting nurses and the school nurses. Dr. Messerli, privatdozent at the University of Lausanne, described the part played by the public health service of that city in the antituberculosis crusade.

Refrigeration of foodstuffs was treated by M. Chrétien, veterinarian, inspector of markets in Paris. Products to be preserved by refrigeration must be absolutely fresh and must be prepared with the maximal consideration of health requirements. The same precautions must be taken while foodstuffs are in cold storage, during their transportation, and in connection with all the operations to which they are subjected up to the time they are consumed. Dr. Loir, director of the public health service of Havre, dealt in his paper more particularly with the preservation of fish. He holds that all the modern principles of industry should be applied to fishing. Cold storage rooms should be constructed on all large fishing vessels. Fish, if well preserved, are a low priced food of high nutritive value. M. le Danois, director of the scientific and technical bureau of sea-fishing, pointed out that the main cause of the rapid decay of fish on board vessels is the water from melting ice used in their preservation during transportation. The best means of remedying this would be the use of pure ice, and the installation of refrigeration apparatus.

In addition to the regular topics on the program, Prof. L. Martin discussed the antidiphtheria crusade, including the presentation of children who had been subjected, a few days previously, to the Schick test. Dr. Dujarric de la Rivière gave an account of his recent study tour of Germany, Sweden, Denmark and the Netherlands.

It is the custom for the conventionists to illustrate the topics discussed by tours of inspection throughout the city. They visited accordingly the public health services where were displayed fresh pieces of meat which, for various reasons, was unfit for consumption. Later they called at the cold storage plants. They were interested in Professor Martel's wax models of pieces of diseased meat. The cold storage plant at Ivry and the abattoir at Aubervilliers were objects of interest.

The next session of the French Congress of Hygiene, to be held in October, 1927, will coincide with the celebration of the fiftieth anniversary of the Société médecine publique. Professor Madsen, president of the health commission of the League of Nations, is to deliver on this occasion an address on the international organization of public health.

The Death of Professor le Dentu

Professor le Dentu has died at the age of 85. He was born in the French colony of Guadeloupe. He was an eminent surgeon whose life-work was accomplished in Paris, where he was professor of clinical surgery at the Faculty of Medicine, and, since 1889, member of the Academy of Medicine. He published a number of works, the most important being a treatise on surgery, in ten volumes, edited in collaboration with his pupil Dr. Delbet, who became later his successor at the university. He held for a time the office of president of the Association française de chirurgie. He retired at the age of 70, though still vigorous and active.

NETHERLANDS

(From Our Regular Correspondent)

Oct. 13, 1926.

Mortality from Stillbirths

An interesting statistical inquiry has been made by Dr. Wesselink as to the causes of death in stillbirths. The inquiry covers all births from 1907 to 1916, or more than 1,500,000 births, with 3.95 per cent, or nearly 16,000, stillbirths. An important observation was to the effect that the number of stillbirths is always the lowest for the third quarter of each year. The mortality from stillbirths is lower in the cities than in the rural districts. In searching for the causes of stillbirths, it was noted that syphilis is ten times more frequent in the cities than in the country. On the other hand, dystocia due to anatomic malformations is a more common cause of death in the rural districts. In view of these two facts (lower urban mortality from stillbirths in spite of the greater frequency of syphilis, and the higher frequency in the rural sections of stillbirths induced by dystocia), the author concludes that clinical accommodations in the country are far from adequate. The unfavorable factors in the cities are more than outweighed by the better results secured in urban hospitals.

The Qualifications of Chauffeurs and Automobilists

A committee has been appointed, composed of members of the Nederlandsche Maatschappij tot Bevordering der Geneeskunde, to study the necessary qualifications for driving an automobile. At the outset, two divergent opinions arose. Some wished to place all chauffeurs on the same footing. Others contended that it would be well to dis-

tinguish two classes: (1) public chauffeurs (taxicabs, autobusses, etc.), and (2) private chauffeurs. It seemed desirable to place the requirements for public chauffeurs somewhat higher than for private chauffeurs. The following seems to be regarded as an irreducible minimum: (1) an age requirement of 18 or 19; (2) absence of all diseases, physical or mental, that might suddenly incapacitate a person to drive an automobile; (3) adequate functioning of all four limbs; (4) visual acuity of 50/100 in each eye without correction, stereoscopic vision adequate for the judging of distances, a normal visual field, satisfactory color vision, absence of day or night blindness; (5) normal functioning of the heart, lungs and nerves; (6) auditory acuity representing an audition equal to hearing a whisper at a distance of 5 meters for one ear and at a distance of 50 cm. for the other ear.

The applicant for a license should be required to affirm in writing that he has not withheld from the examiner information in regard to any disease. The anamnesis should discover especially existing alcoholism, epilepsy and psychic diseases.

Cardiac arrythmias should not necessarily disqualify the applicant. On the other hand, advanced arteriosclerosis is incompatible with the responsibilities of the chauffeur. Examination of the lacrimal ducts is rather important, as watering of the eyes is, in a sense, a disqualification. A study of the reflexes, the power of attention and psychomotor reactions is recommended.

The Antimalaria Crusade

The report of the scientific commission on malaria has been issued along with the publications of the public health services. It contains the first results of the antimalarial campaign undertaken by the people themselves. Something over a year ago, the Health Society launched a publicity campaign during which the attention of the public was called to the importance of destroying the anopheles mosquitoes in the barns and stables, during the winter. The figures just published are therefore of great interest. Of 2,097 barns and stables examined, 311 were found to be infested with anopheles mosquitoes, and nearly five million mosquitoes were destroyed in these places. In 196 houses in which cases of malaria had been known to occur in recent years, an energetic search for the vector was instituted. During the winter, in some sections of the country, notably in the vicinity of Zaandam, series of mosquito exterminating campaigns have been launched.

Charlatanism in Amsterdam

The medical press is continuing its campaign against medical avertising in street-cars. It charges the municipal administration with sacrificing the best interests of citizens by thus playing into the hands of charlatans—all for an inconsiderable profit.

Loss of Time Among Workingmen

The *Katholiek Social Weekblad* has just published a statistical study covering the years 1923, 1924 and 1925, in which it gives the average number of days sickness experienced by workmen in the various industries. Miners lose the most time on account of sickness. The figures below give the averages for the three-year period:

Wood-working industry	7.43 days	Miners	17.03 days
Tailors	5.19 days	Painters	5.87 days
Farmers	6.16 days	Shoemakers	5.96 days
Metallurgists	7.17 days	Weavers	7.86 days

The Control of Rheumatism

An antirheumatism crusade has been launched. Dr. Treub is president of the committee and Dr. Van Breeman is the secretary. Its purpose is to collect information in regard to all forms of medical activity dealing with the question of rheumatism, particularly from the therapeutic side. The committee will seek to organize bureaus of consultation; establish a hospital with laboratory; organize public health services against rheumatism (particularly in the large industrial centers), and create an international commission with a view to holding an international congress on the subject of rheumatism.

Death of Professor Kuhn

Casper Hendrik Kuhn, professor of pathologic anatomy and of legal medicine at the Faculty of Medicine in Amsterdam, has died. He resigned his post in 1909.

BERLIN

(From Our Regular Correspondent)

Oct. 30, 1926.

The Crusade Against Alcoholism

During the war, the consumption of alcoholic beverages decreased in Germany and there was a consequent diminution of the sequels of alcoholism. In the period since the war, former conditions have gradually returned, and the number of patients admitted to hospitals and psychopathic institutions by reason of addiction to alcoholic beverages has increased considerably. This circumstance has strengthened the endeavors to restrict by law the consumption of alcohol. As a step in this direction, several political parties in the reichstag introduced a bill (the so-called *schankstättengesetz*) designed to accomplish that end, which contained the following provisions:

By provincial law it may be decreed that, on demand of a fifth of the legal voters of a commune or of a communal district, an election shall be ordered to decide whether or not in the commune or in the communal district (1) permission shall be granted newly established bars to dispense alcoholic beverages; (2) in case of change of ownership, permission to dispense alcoholic beverages shall continue to be granted to existing bars, and (3) the dispensing of alcoholic beverages shall be prohibited (*a*) only to the retail trade; (*b*) only over bars, or (*c*) over bars and to the retail trade. If three fourths of the legal voters cast their votes at the election, and two thirds of the legal votes cast shall favor the adoption of the interdict, the authorities having jurisdiction in the matter must, within two months after the holding of the election, issue corresponding orders or instructions. The interdict against the dispensing of alcoholic beverages (point 3) shall become effective six months after its promulgation.

An interval of five years must elapse after a previous election before another is held. The instituted changes may be abolished or restricted only in the event that, at a new election, three fourths of the legal voters cast a vote and two thirds of the votes cast favor abolition or restriction of the interdict.

During the period in which the interdict with reference to the dispensing of alcoholic beverages remains in force, the general permission rests in abeyance, being subject merely to the imposed limitations.

If the interdict shall remain in force for a period of twelve years, the permission, so far as it was affected by the interdict, shall become null and void.

The chief provincial authorities shall adopt the necessary measures to enforce the application of the interdict.

The foregoing bill, which recognizes the principle of local option, awakened a contest, which was participated in primarily by the advocates of prohibition and those interested in alcohol and alcohol consumption. The opponents of the bill adduced that the ulterior purpose of the projected law was to make Germany dry territory as had been accomplished in the United States. In fact, reference was frequently made to

statements of prohibitionists who in their zeal for the passage of the bill went too far with the revelation of their ultimate hopes. For example, one earnest advocate of the bill is reported to have said: "Once the principle of local option has become generally recognized, it will not long be confined to the question of granting bar privileges but will soon be extended to other social problems. A population that becomes accustomed to exercise the privilege of local option in the matter of the bestowal of bar privileges will demand the right to express its will first hand with regard to many problems which at present are controlled exclusively by boards, committees and other bodies." Fears that such an extension of the right of communal determination, or the local option idea, induced some who were not otherwise actually in favor of the present consumption of alcohol to join the opponents of the bill. They alleged that, in decisions left to a general vote of the members of the commune, lack of judgment and influence exercised by agitators were apt to play a big part, so that true insight into the situation and calm deliberation would not be the deciding factors in the result. Fears were awakened also of the situation that would arise if, in a certain commune, the number of bars should be greatly limited while in the adjoining communes the number was increased ad libitum. The result was that the bill was defeated in the reichstag by a slight majority.

The Düsseldorf Meeting of German Scientists and Physicians

At the Düsseldorf meeting of the society of German scientists and physicians, the department of internal medicine, in collaboration with the department of pediatrics and the theoretical disciplines, considered the topic of "water balance." Asher of Bern discussed the subject from the physiologic point of view. The dominating principle is the independent mechanism of the processes of water metabolism in the cells by which the exchange between blood and tissues is regulated. The researches of the author have shown that the incitation responsible for the exchange processes has its source in the prevailing activities of the tissues. The permeability of the cells is subject to manifold functional regulation. Water metabolism undergoes certain fluctuations through injected salts and other pharmacologically active substances (provided physiologic conditions are preserved) chiefly through changes in permeability. According to researches carried out in the Physiologic Institute at Bern, the kidney furnishes a good example in support of the conception that the primary factor is the metabolism of the whole organism. The so-called specific diuretics do not influence primarily the kidney but the tissues, causing the passage of electrolytes from the tissues into the blood. In response to the slight increase of electrolytes in the blood, an increased secretion of the normally susceptible kidney occurs. Proof of this fact is furnished by the so-called diversion experiment, by which electrolytes are diverted from the blood. If, by this procedure, a lowering of the electrolyte concentration of the blood is brought about, even the specific diuretics will not suffice to increase the secretion of urine. An inescapable condition for increased water secretion on the part of the kidney is the presence of available water. Recent observations are in opposition to the former secretory theory of urine secretion and also to the mechanical theories, which emphasize filtration as the result of blood pressure. The kidney cell reacts, as a highly sensitive structure, on the changes brought about in the blood by the body metabolism. The glands of internal secretion exert an influence, and the thyroid gland, particularly, has a regulatory action on water metabolism. Furthermore, the posterior lobe of the pituitary body plays an important rôle, and Pick has shown that water fixation in the tissue cells is influenced by pituitary extract.

The clinical discussion was given by Siebeck of Bonn. The quantities of water eliminated within definite intervals, following the ingestion of fluids, do not depend solely on kidney function but to a great extent on the constitution and the momentary adjustment of the organism. In the blood there takes place a considerable dilution in a typical two-phase course, which is characterized not merely by income and outgo but is an expression of complicated exchange processes between the blood and the tissues. The ingestion of fluids constitutes only the inciting impulse, whereas the full measure of the reaction depends on widely divergent factors: impulses from the central nervous system or of hormonal origin, vasomotor processes and disorders of the vascular system, changes in nutrition and in metabolism. Under natural conditions, the amount of fluid intake depends to a great extent on custom and usage, so that it is often solely determined by habit. Thirst is induced partly by increased osmotic concentration of the blood and partly by the dryness of the pharyngeal mucous membrane, but it may be caused by psychic anomalies. The water reservoirs are found in the interstitial fluid, and are filled or emptied as need requires. In addition, there is a slight fluctuation in the water of imbibition, which is to be regarded as an integral component of the organism. Under the influence of a protein diet, the water reservoirs are emptied, which has also a certain therapeutic significance, whereas, in connection with losses of protein, water is retained in the body. In edema, which is due to a disturbance of the metabolic exchange between the blood and the tissues, the water reservoirs are overfilled. At the basis of acute, and, to a certain extent, also of chronic, nephritis, lies some disorder of the general vascular system; in nephrosis there is an alteration of metabolism. In cardiac disease there is, owing to stasis, an alteration of the vessels and tissues. In the treatment of edema, special dietetic measures are to be considered: reduced water intake, only small quantities of salt, and, for a time, undernutrition; often a diet rich in proteins is favorable to that end. Also sweating treatment will often help to mobilize an extra water supply and to project it into the blood. Much more serious than edema is reduction of water in the body, caused, for instance, by losses through the intestine in dysentery and cholera; such a condition points to a complete breakdown of the water fixation capacity of the tissues.

Rominger of Kiel discussed the subject from the standpoint of the pediatrician. He emphasized the significance of the fluctuations of the water balance in the growing organism. The apex of water accumulation is reached in the child with the fifth month of life, whereupon a diminution begins to be noted. In conformity with the high water content of the child organism, the water intake of the child is about four times that of the adult. Excretion takes place also in young children mainly through the kidney; the conditions governing excretion are, however, very changeable.

Marriages

ABRAHAM FEITELBERG, New York, to Miss Rose Mildred Berkowitz of New Britain, Conn., October 12.

EDWIN JOHNSTON CURTIS to Miss Eloise Marjorie Scovern, both of St. Louis, November 10.

PAUL C. WALTER, Harrisburg, Pa., to Miss Gertrude Brenner of Baltimore, June 24.

HAROLD K. MARSHALL, Tooele, Utah, to Miss Olive Romney of Salt Lake City, June 23.

RICHARD H. LINDQUIST to Miss Grace Oberg, both of Minneapolis, in October.

ALOYS MAHOWALD, Albany, Minn., to Miss Celia Maus of Watkins, in October.

Deaths

Louis Benedict Baldwin ✠ Minneapolis; University of Minnesota Medical School, Minneapolis, 1897; assistant superintendent of the State Hospital for Insane, Jamestown, N. D., 1900-1903; superintendent of the North Dakota Institute for Feeble Minded, Grafton, N. D., 1903-1907, the State Hospital for Insane, Jamestown, N. D., 1907-1910, the Charles T. Miller Hospital, St. Paul, 1918-1921, and the University Hospital, Minneapolis, since 1910; served during the World War; aged 53; died, October 24, at the Abbott Hospital, of essential hypertension and renal insufficiency.

Charles Moore Robertson ✠ Waukegan, Ill.; State University of Iowa College of Medicine, Iowa City, 1888; member of the American Academy of Ophthalmology and Oto-Laryngology, the American Laryngological, Rhinological and Otological Society and the American Otological Society; formerly assistant professor of otology, Northwestern University Medical School, Chicago; veteran of the Spanish-American and World wars; aged 61; died, October 31, at Highland Park, of peritonitis, following an appendectomy.

Ernest Valentine Hubbard, New York; Columbia University College of Physicians and Surgeons, New York, 1898; member of the American Laryngological, Rhinological and Otological Society; formerly on the staffs of the Roosevelt, and Manhattan Eye, Ear, Nose and Throat hospitals; aged 52; died, October 24, of heart disease.

Walter Wheeler Alleger, Washington, D. C.; Howard University School of Medicine, Washington, 1885; Georgetown University School of Medicine, Washington, 1890; emeritus professor of bacteriology, Howard University School of Medicine; aged 66; died, September 30, at Silver Springs, Md., of cerebral hemorrhage.

Owen E. Jones ✠ Rochester, N. Y.; Albany Medical College, 1894; past president of the Medical Society of the State of New York; delegate to the American Medical Association, 1916, 1922, 1925 and 1926; on the staffs of the Rochester General, St. Mary's and the Infants' Summer hospitals; aged 62; died, November 18.

Harry Hinkle Stark ✠ El Paso, Texas; Marion-Sims College of Medicine, St. Louis, 1896; member of the American Ophthalmological Society; formerly professor of materia medica and toxicology at his alma mater; served during the World War; aged 58; died, October 22, of tuberculosis.

John Sheridan Campbell, Portersville, Pa.; Western Reserve University School of Medicine, Cleveland, 1891; Jefferson Medical College of Philadelphia, 1906; member of the Medical Society of the State of Pennsylvania; aged 61; died, July 17, of an injury received in a fall.

Irvy Lee McGlasson ✠ San Antonio, Texas; Kentucky School of Medicine, Louisville, 1896; member of the American Dermatological Association and the Radiological Society of North America; served during the World War; aged 50; died, November 12, of angina pectoris.

William Harrison Daniels, Crookston, Minn.; University of Louisville School of Medicine, 1910; member of the Minnesota State Medical Association; served during the World War; aged 40; died, October 14, at the Northern Pacific Hospital, St. Paul, of brain tumor.

James Wilford Good, Vancouver, B. C., Canada; University of Toronto Faculty of Medicine, 1877; L.R.C.P., Edinburgh, Scotland, 1877; emeritus professor of ophthalmology, University of Manitoba Faculty of Medicine, Winnipeg; aged 74; died, September 1.

William H. Smith, Donnelly, Minn.; University of Michigan Homeopathic Medical School, Ann Arbor, 1906; member of the Minnesota State Medical Association; aged 62; died, in July, at St. Luke's Hospital, Minneapolis, of carcinoma of the stomach.

Roy Emmons Truly, Denison, Texas; Baylor University College of Medicine, Dallas, 1918; on the staffs of the Denison, and Missouri, Kansas and Texas Railroad Employees hospitals; aged 34; died, October 30, following an appendectomy.

William Williams Faison ✠ Goldsboro, N. C.; Jefferson Medical College of Philadelphia, 1878; member of the American Psychiatric Association; superintendent of the State Hospital; aged 72; died, October 22, of cerebral hemorrhage.

Adolf Friedrich Herrmann, New York; Columbia University College of Physicians and Surgeons, New York, 1913; on the staff of the New York Post-Graduate Medical School and Hospital; aged 50; died, November 4, of heart disease.

John R. Simson, Tonawanda, N. Y.; Cleveland University of Medicine and Surgery, 1880; member of the Medical Society of the State of New York; aged 74; died, October 1, as the result of cerebral hemorrhage which occurred in May.

William Francis Magruder, Washington, D. C.; Howard University School of Medicine, Washington, 1918; assistant professor of physiology, biochemistry and pharmacology at his alma mater; aged 32; died recently, of tuberculosis.

Joseph Goldstein, Philadelphia; Medico-Chirurgical College of Philadelphia, 1906; member of the Medical Society of the State of Pennsylvania; on the staff of the Jewish Hospital; aged 46; died, November 9, of septic poisoning.

Frank Edwin Smith, Los Angeles; University of Pittsburgh School of Medicine, 1914; member of the California Medical Association; on the staff of the Good Samaritan Hospital; aged 36; died suddenly, October 18, of heart disease.

John Francis Corcoran, Braddock, Pa.; University of Vermont College of Medicine, Burlington, 1920; on the staff of the Braddock Hospital; aged 34; died, October 9, at the Atlantic City (N. J.) Hospital, of gastric ulcer.

Charles Emery Williams ✠ Houlton, Maine; Medical Department of Columbia College, New York, 1883; formerly on the staff of the Eastern Maine General Hospital, Bangor; aged 69; died, July 13, of locomotor ataxia.

Hugh Capers Walker, Augusta, Ga.; University of Georgia Medical Department, Augusta, 1925; on the staff of the University Hospital; aged 25; died, October 21, of injuries received in an automobile accident.

Howard Dickes Geisler ✠ Philadelphia; University of Pennsylvania School of Medicine, Philadelphia, 1899; on the staffs of the Germantown and Memorial hospitals; aged 49; died, November 12, of pneumonia.

Daniel James Paradine, Duluth, Minn.; Bennett Medical College, Chicago, 1911; member of the Minnesota State Medical Association; aged 40; died, October 18, of cholecystititis and acute pancreatitis.

Thomas Madison Taylor ✠ New York; Bellevue Hospital Medical College, New York, 1881; for many years representative for Lea and Febiger, publishers; aged 69; died, November 6, of cerebral hemorrhage.

Felix W. Hazelwood ✠ New Albany, Ind.; Hospital College of Medicine, Medical Department Central University of Kentucky, Louisville, 1900; aged 60; died, October 8, at the Battle Creek (Mich.) Sanatorium.

Sarah Johnson Dean, Seattle; University of Michigan Medical School, Ann Arbor, 1880; member of the Washington State Medical Association; aged 85; died, September 30, of coronary thrombosis.

John Morris McConihay ✠ Charleston, W. Va.; Kentucky School of Medicine, Louisville, 1876; aged 73; died, November 2, as a result of cerebral hemorrhage which occurred some months ago.

James A. De Vore ✠ Grand Rapids, Mich.; Cincinnati College of Medicine and Surgery, 1877; proprietor of a hospital bearing his name; aged 72; died, November 4, following a long illness.

Eric Theodore Sherping, Wyndmere, N. D.; Minneapolis College of Physicians and Surgeons, 1900; aged 65; died, November 3, at St. Luke's Hospital, Fergus Falls, Minn., of carcinoma.

Juan Fernandez Bennett Drummond, New Bedford, Mass.; Woman's Medical College of Pennsylvania, Philadelphia, 1888; aged 62; died, November 4, of heart disease and chronic nephritis.

William F. Sibley, Robeline, La.; Memphis (Tenn.) Hospital Medical College, 1897; member of the Louisiana State Medical Society; aged 57; died, August 19, of arteriosclerosis.

William Byrd Pinson, Abilene, Texas; University of Arkansas Medical Department, Little Rock, 1891; also a minister; aged 60; died, October 11, following a long illness.

John T. Beatty, Denver; Denver College of Medicine, 1895; member of the Colorado State Medical Association; aged 61; died, August 25, at the Presbyterian Hospital, of pneumonia.

Joshua Robert Hayes, Washington, D. C.; University of Pennsylvania School of Medicine, Philadelphia, 1855; Civil War veteran; aged 96; died, November 4, of heart disease.

Oscar Lee Rivenbark, Hartford, Ala.; Georgia College of Eclectic Medicine and Surgery, Atlanta, 1893; formerly mayor; aged 52; died, September 31, of cerebral hemorrhage.

Conrad L. Partridge, Ridley Park, Pa.; Jefferson Medical College of Philadelphia, 1874; on the staff of the Taylor Hospital; aged 74; died, November 11, of heart disease.

Florence Buhrman Evers ✠ Martinsburg, W. Va.; Woman's Medical College of Baltimore, 1908; aged 42; died, September 21, at a hospital in Baltimore, following an operation.

Hannah Louise Taylor Muir, Colorado Springs, Colo.; University of Colorado School of Medicine, Denver, 1893; aged 67; died, November 2, of bronchopneumonia.

Douglass Archibald Condrey MacChesney, Monterey, Calif.; Cooper Medical College, San Francisco, 1897; aged 54; died, August 17, of carcinoma of the thyroid.

Louis A. Simmon, Auburndale, Fla. (licensed, Florida, 1907); formerly mayor of Auburndale; aged 76; died in October, at the home of his daughter in Tampa.

James P. Ballenger, Armuchee, Ga.; Southern Medical College, Atlanta, 1885; member of the Medical Association of Georgia; aged 70; died, October 31, of uremia.

John Thomas Buckley, Kingston, N. Y.; University of Vermont College of Medicine, Burlington, 1884; aged 61; died, September 19, of cerebral hemorrhage.

Baylis Chamblin, St. Louis; Homeopathic Medical College of Missouri, St. Louis, 1886; aged 69; died, in October, of chronic nephritis and mitral stenosis.

Luther S. Mason, Clover, Va.; College of Physicians and Surgeons, Baltimore, 1874; aged 73; died, October 14, of exhaustion, following acute gastritis.

Peter J. Morrison, Hillsdale, Kan.; University of Michigan Medical School, Ann Arbor, 1869; aged 80; died, May 26, of pneumonia and cerebral hemorrhage.

Francis Marion Allison ✠ Gardner, Ill.; Medical College of Indiana, Indianapolis, 1904; aged 46; died, October 31, of complications following influenza.

Anson Morrill Andrews, Gray, Maine; Medical School of Maine, Portland, 1901; aged 49; was instantly killed, October 2, in an automobile accident.

Ralph Sherwood Hedges, Lewistown, Mont.; University and Bellevue Hospital Medical College, New York, 1899; aged 58; died in October.

James William Jesse ✠ Santa Rosa, Calif.; Medical Department of the University of the City of New York, 1886; aged 69; died, November 3.

James T. Massey, Woodside, Del.; University of Pennsylvania School of Medicine, Philadelphia, 1872; aged 81; died, August 14, of senility.

James B. Black, McKeesport, Pa.; Jefferson Medical College of Philadelphia, 1883; aged 74; died in October, of angina pectoris.

G. H. Ogbourne, Tallulah, La.; Kentucky School of Medicine, Louisville, 1888; aged 68; died in August, of cardiorenal disease.

James McGinley Gibson ✠ Suffolk, Va.; Columbus (Ohio) Medical College, 1879; aged 72; died, October 9, of cerebral hemorrhage.

Earnest Francis Swift, Wellsville, Ohio; Ohio Medical University, Columbus, 1898; aged 50; died, September 25, of pneumonia.

Frank F. Drueding, Philadelphia; Jefferson Medical College of Philadelphia, 1883; aged 67; died, May 12, of appendicitis.

James F. Alexander, Brighton, Colo.; Missouri Medical College, St. Louis, 1888; aged 64; died, September 4, of carcinoma.

George E. Bradford, New London, Conn.; Eclectic Medical Institute, Cincinnati, 1879; aged 83; died, June 9, of myocarditis.

Thomas Jefferson Springfield, Ensley, Ala. (licensed, Alabama, 1876); aged 77; died, November 3, of chronic nephritis.

Cornelius W. Seeber, Los Angeles; Missouri Medical College, St. Louis, 1872; aged 72; died, June 21, of pneumonia.

John Robertson, Cincinnati (licensed, Ohio, 1897); aged 72; died, recently at the Christ Hospital, of coronary thrombosis.

Andrew Charles Bullard, Quinton, Okla. (licensed, Oklahoma, 1908); aged 71; died, July 14, of myocarditis.

Victor Leser, Philadelphia; University of Bonn, Germany, 1891; aged 62; died, October 20, at Berlin, Germany.

Arthur Edgar Price, Chicago; Rush Medical College, Chicago, 1897; aged 51; died, October 22.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER GENERAL MATERIAL OF AN INFORMATIVE NATURE

FREE BREATH

The O. W. Dean Brand of "Asthma Cure" Quackery

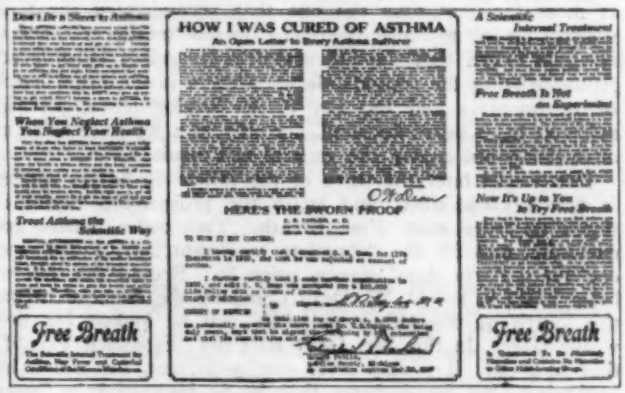
From Benton Harbor, Michigan, the O. W. Dean Company, Inc., previously known as the Benton Asthma Remedy Company, exploits "Free Breath," described as "The World's Wonder Treatment for Asthma, Bronchitis, Hay Fever and Catarrh of the Mucous Membranes."

The O. W. Dean Company was incorported under the laws of Michigan in March, 1926. The incorporators who are also the officers of the concern were:

OLIVER W. DEAN.....President
HARRIET BOWER.....Vice-President
ERNEST A. BOWER.....Secretary
HARRIET DEAN.....Treasurer

From such sources of information as we have access to it appears that Oliver W. Dean is an undertaker and previously was in the business of selling embalming fluids.

For the purpose, presumably, of assuming a respectability that is so sadly lacking in mail-order quackery, the O. W.



Dean Company gives as references the "Benton Harbor State Bank" and the "American National Bank." Also it would seem for the purpose of lending an air of verisimilitude to an otherwise bald and unconvincing tale, the concern publishes what purports to be a facsimile letter from E. R. Taylor, M.D., of Benton Harbor, Michigan. According to this letter Dr. Taylor certifies that he examined O. W. Dean for life insurance in 1919 and that he was rejected on account of asthma, and that he examined him again in 1920 and "said O. W. Dean was accepted for $10,000 life policy with no trace of asthma."

The methods by which Free Breath is exploited differ practically not at all from those that are classic to mail-order quackery. The point of contact between the quack and the sufferer is made, as usual, through the advertising pages of those newspapers and magazines that are not above sharing in the profits of charlatanry. The advertisements stress the fact that asthma sufferers can try Free Breath without cost —"You can try it free." The body of the advertisement purports to detail the condition of O. W. Dean, who, the public is told, "suffered all the tortures of asthma" for "six long years." Mr. Dean claims that his condition was so serious that "he could not lie down for more than five minutes at a time without choking and gasping for breath." He often tried to get life insurance but was always rejected. He tried every asthma treatment he had ever heard of and nothing did him any good. Then there came into his life the inevitable friend with a formula—and this "remarkable medicine" gave him almost instant relief, and after the first day he "could lie down and sleep in comfort." In a very short time he was com-

pletely cured and was able to get a $10,000 life policy. Now he is devoting his life to suffering humanity and offers to send to all asthma sufferers "a trial treatment of Free Breath."

Those who write for the free trial treatment receive a small bottle containing about two ounces of a colorless liquid having the odor of menthol. By the same mail comes a letter explaining how impossible it will be for this small amount to cure asthma and how necessary it is to pursue "a continued unbroken treatment."

The general directions that come with the specimen declare that Free Breath "does not contain narcotics or other habit-forming drugs, therefore is perfectly harmless." This last statement is worth bearing in mind, in view of the fact that analysis shows that each teaspoonful of Free Breath contains three drops of Fowler's solution (arsenic trioxide), to say nothing of 2½ grains of potassium iodide. The direction sheet mentions the fact that this "perfectly harmless" preparation may "cause disagreeable symptoms, such as headache, nausea, inflamed mucous membranes, dizziness, breaking out, stinging pains, etc." The sufferer is told not to be alarmed by these symptoms—they will pass away in a few days "and very likely leave you in a greatly improved condition."

With the letter that comes concurrently with the free trial treatment there is a "report form" to be filled out. To this is appended a request that the names and addresses of other persons having asthma be sent to the O. W. Dean Company. There is also the inevitable order blank for the "complete treatment"—price $18.

Three days after receiving the initial letter and trial treatment, the second letter of the follow-up series comes. This is more insistent than the one that accompanied the trial package on the necessity of keeping up the "treatment"—and it is again urged that the $18 complete treatment be ordered. Accompanying the second follow-up there is the usual batch of testimonials and the Dr. E. R. Taylor letter, already referred to, is again featured, not only in a separate piece of advertising but among the general testimonials.

Two weeks later the third of the follow-up letters comes. It breathes optimism, and again the prospective victim is urged to order more Free Breath. Two order blanks are enclosed; one for the "complete treatment," price $18, and one for a thirty days' supply, price $6. Should this fail to bring home to the O. W. Dean Company the financial bacon, the fourth of the follow-up series can be looked for two weeks later. In this Mr. Dean tells his "Esteemed Friend" that he —Mr. D.— may seem over-persistent, for which he apologizes, but he declares that he is interested in "your case." This fourth letter brings the first of the price cuts and the $6 thirty-day treatment is now offered for $5 ($2.50 down and the balance in thirty days). Should this still fail to consummate a sale, Mr. Dean gives the prospect a rest for a few weeks, at which time comes No. 5 of the follow-up. In this Mr. Dean asssmes that "it is the modest cost of the complete Free Breath treatment that has prevented you from continuing untii you are well again." He realizes that even $6 to some people mean a great deal; therefore, he is willing to do his share and offers to send the complete $6 treatment for $3. Should this "liberal offer" fail to bring Mr. Dean a money order or check he, apparently, writes off the name and charges up the advertising and postage to profit and loss.

Practically every "patent medicine" sold for the alleged cure of asthma contains either potassium iodide, Fowler's solution, or both. It was a foregone conclusion from the description given by the Dean concern of the symptoms following the use of Free Breath that it ran true to form and contained at least potassium iodide. A thirty days' treatment, price $6, of Free Breath was ordered through the United States mails, and the specimen turned over to the Chemical Laboratory of the American Medical Association. The laboratory report follows:

LABORATORY REPORT

"One original bottle of 'Free Breath' (the O. W. Dean Co., Inc., Benton Harbor, Mich.) was submitted to the A. M. A. Chemical Laboratory for examination. The bottle contained about 480 Cc. (16 fluidounces) of clear, colorless liquid having an alkaline, salty taste. The odor resembled that of menthol. The specific gravity at 20 C. was 1.052; the amount of solids obtained by evaporating the liquid at 120 C. was 7.5 per cent. Qualitative tests indicated the presence of potassium, arsenic and iodide. Bromides, alkaloids, coal tar products and laxative drugs were not found. Quantitative estimations yielded the following:

"Potassium (K^+)	1.68 per cent
"Iodide (I^-)	5.30 per cent
"Arsenic (as As_2O_3)	0.05 per cent
"Water	92.50 per cent
"Undetermined (by difference)	0.47 per cent

"From the foregoing, it is concluded that the preparation consists essentially of 7 Gm. of potassium iodide and 0.05 Gm. of arsenic trioxide in 100 Cc. This is equivalent approximately to 21 grains of potassium iodide and 24 minims of solution of potassium arsenite (Fowler's solution) made to one fluidounce. Each dose (one teaspoonful) is equivalent, therefore, to 2½ grains of potassium iodide and three drops of Fowler's solution."

Here, then, we have simply a solution of potassium iodide and arsenic trioxide sold with no warning as to the dangerous possibilities and specifically stressed as "absolutely harmless." It is to be hoped that the overworked and undermanned Fraud Order Department of the Post Office will get around to this particular piece of quackery before long.

Correspondence

ELEVATORS NEEDED IN PUBLIC SCHOOLS

To the Editor:—Concerning the need of elevators in the public schools of New York, I am glad that Dr. Goldberger (THE JOURNAL, October 30) does not defend the lack of elevators on medical grounds, but rather as an official of the board of education of New York. I am also glad that Dr. Goldberger does not deny that not one of the 605 elementary schools in Greater New York has an elevator.

It is a reflection on the city that the public schools are the only public buildings without elevators, and the majority of these are four and five stories high. In the consensus of medical opinion, stair climbing has a harmful effect on the hearts of children. This opinion is corroborated by numerous letters from the principals in the various schools, from which I can extract the following:

1. The climbing of stairs in buildings of four or five stories is a very serious heart strain for pupils and teachers.

2. I am informed that it is against the law to erect walk-up apartment houses of more than six stories. Yet our five-story school buildings look down on the roofs of such six story apartment houses. It is, indeed, a drain on pupils and teachers to climb four or five double flights of stairs, yet the "upper floor people" are obliged to do this twice daily, at the beginning of the morning and afternoon sessions; and even oftener on "assembly days." In the junior high schools, where the classes move from room to room and sometimes from floor to floor at the beginning of each forty-five minute period, conditions are even worse.

3. We all agree with you. The irony of having elevators in high schools and none in elementary schools is too obvious. School people have long recognized the need, but in the last analysis we can do nothing without an aroused public that has been educated to the need.

Other letters from principals and some teachers are in the same tenor.

According to the last report of the New York Heart Association, "The segregation of cardiopathic children into special classes as has been done by the Department of Education in this city has been found unsatisfactory by the New York Heart Association" (*Bull. New York Acad. of Med.*, September, 1926). Further, "The Public Health Relations Committee recommends that all segregated classes for cardiac children be eventually discontinued." It then leaves the problem for subsequent consideration by the department of health.

I am surprised that Dr. Goldberger is not aware of the fact that segregating children with cardiac disturbances into cardiac classes has been disapproved by the Committee on

Public Health Relations of the New York Heart Association. Children should not be forced to climb to get an education. There is no reason why children and teachers should be compelled to climb stairs more than the people who use the other public buildings of this city.

One of the associate superintendents of the board of education said that school buildings were intentionally built without elevators that the pupils using them may be enabled to climb for exercise. When such ludicrous arguments by officials of a city department are advanced in defense of an obvious defect, it is time that physicians viewed the situation from a purely medical standpoint to call the attention of the public to what has so long remained a blot on the community.

MORRIS H. KAHN, M.D., New York.

NOTE ON THE USE OF ORTHO-IODOXY-BENZOIC ACID

To the Editor:—THE JOURNAL of September 4 published the work of Young and Youmans on the treatment of infectious arthritis by the use of ortho-iodoxybenzoic acid. Through some error, a note of recognition at the end of the paper in which we thank Dr. A. S. Loevenhart of the University of Wisconsin for his personal interest in our work and also for a personal communication from him in which he stated that in 1910 he had treated a number of cases of arthritis in Cook County Hospital with this compound with apparently beneficial results was omitted. However, this note appears in the reprints and was probably omitted from THE JOURNAL for the sake of brevity. The authors regret very much that this occurred and they are pleased to make formal correction of this omission.

A. G. YOUNG, PH.D.,
JOHN B. YOUMANS, M.D.,
Ann Arbor, Mich.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

MANGANESE BUTYRATE FOR FURUNCULOSIS

To the Editor:—Is manganese butyrate of any value in furunculosis? What is its pharmacologic action? Is it of any value in other conditions, such as staphylococcic or streptococcic infections, acne vulgaris and gonorrhea? Please omit name. M.D., St. Louis.

ANSWER.—Manganese butyrate, given intramuscularly in doses of from 1 to 1.5 cc. of the 1 per cent solution, probably acts as an alterative agent by nonspecific stimulation of immunity reactions; and, as such, might not only be effective in certain coccal infections like those mentioned, but also in other conditions in which parenteral alterative therapy has been found of value. There appears to be no good evidence in favor of the use of manganese butyrate in furunculosis.

The pharmacologic action of manganese is that of an irritant locally; and, on systematic administration, a depressant of the circulation and of the central nervous system, with a tendency to production of fatty degeneration of the viscera.

DYSTROPHIA ADIPOSOGENITALIS

To the Editor:—Please state treatment and prognosis of dystrophia adiposogenitalis in boy 8½ years of age. M. K. H., New York.

ANSWER.—The present unsatisfactory understanding of endocrine disturbances makes it difficult to give a satisfactory answer. Individual cases have been observed and reported, but more information is necessary. At present one may say that the treatment depends largely on the case at hand. In the majority of instances there is a destructive disease, often a tumor involving the pituitary, especially the posterior lobe. In any case the sella turcica should be looked at in cranial roentgenograms. All such patients deserve careful and detailed physical and laboratory examinations. Operative procedure on the hypophysis are only fairly satisfactory. Cases of dystrophia adiposogenitalis have perhaps the best prognosis from a surgical standpoint as compared with other types of disease in this region. Syphilis should be eliminated by history, examination and Wassermann reactions before any operation is undertaken.

Glandular therapy for relief of hypofunction is still experimental. Reports vary in degree of response to treatment; both extremes, cure and failure, are reported following the giving of whole gland preparations. There are three types differentiated in the literature, and it seems possible that some such explanation may account for the varying results.

There are undoubtedly combinations of glands involved. The thyroid and the sex glands seem most closely associated. Guarded doses of thyroid gland and sometimes of whole pituitary gland seem to constitute the most favored therapy. Ovarian and testicular extracts have been used, but their value is not borne out by clinical observations.

NORMALS FOR BLOOD CONSTITUENTS AFTER FASTING

To the Editor:—I hesitate to accept the older figures which are available to me. Please give me normals for fasting blood chemistry: nonprotein nitrogen; urea; creatinine; chlorides; sugar; carbon dioxide; cholesterol; albumin; globulin; A: B ratio.

D. A., M.D., Buffalo.

ANSWER.—When blood is withdrawn after a fourteen hour fast, the following figures may be accepted as normal for the blood determinations listed below:

Nonprotein nitrogen	from 25 to 35 mg. to 100 cc.
Urea nitrogen	from 12 to 15 mg. to 100 cc.
Creatinine	from 1 to 2.5 mg. to 100 cc.
Sugar	from 80 to 120 mg. to 100 cc.
Cholesterol	from 140 to 170 mg. to 100 cc.
Chlorides (whole blood)	from 450 to 500 mg. to 100 cc.
Chlorides (plasma)	from 570 to 620 mg. to 100 cc.
Carbon dioxide combining power or capacity (plasma)	from 55 to 70 per cent by volume
Carbon dioxide content (plasma)	from 50 to 65 per cent by volume
Albumin (refractometric serum)	5.6 per cent
Globulin (refractometric serum)	1.9 per cent
A:B ratio	4:1
Albumin (plasma)	4.5 ± 0.5 per cent
Globulin (plasma)	2.6 ± 0.4 per cent
A:B ratio	2.7:1

Rowe (*Arch. Int. Med.* **18**:455 [Oct.] 1916 and subsequent papers) has studied the serum proteins in health and diseases with the Robertson refractometric method. The foregoing figures are the average of his twenty-two normal subjects. More recently analyses have been made on plasma with the Howe or Wu modification of the Cullen-Van Slyke technic. Fahr and Swanson (*Arch. Int. Med* **38**:510 [Oct.] 1926) have just reported the foregoing averages on twenty-three normal subjects, mostly from their own analyses and those of Linder, Lundsgaard and Van Slyke (*J. Exper. Med.* **39**:887, 1924).

HONEY IN INFANT FEEDING

To the Editor:—Could honey be used as a modifier in infant feeding? If so, what would be an average formula for an 8 pound infant 2 months old? Please omit name. M.D., Wisconsin.

ANSWER.—From time to time honey has been used in the preparation of milk mixtures for artificially fed infants. One may safely say that it possesses no advantages over the other forms of carbohydrates ordinarily employed. It has the following disadvantages: Comparatively, the cost is excessive; it is not a uniform product, and opportunity for adulteration is often present. There is often laxative action, and the amounts fed must be governed accordingly.

TREATMENT FOR CHOREA

To the Editor:—Is there a later authentic treatment for chorea than rest, good hygiene, and arsenic in some form?

K. L. MACLACHLAN, M.D., Melrose, Mass.

ANSWER.—The additional use of sedatives is required in severe cases; and, to be effective, they must generally be used in sufficient dose to get the patient into a somewhat drowsy condition. When this state has been attained and the movements have diminished, the dose is lessened, as by omitting each alternate administration of the remedy. Sodium bromide is usually the backbone of the sedative treatment, but it is not

likely to be sufficient by itself. The addition of barbital or even of chloral is usually required for definite results. Magnesium sulphate, has, of late, been advocated, given subthecally or subcutaneously. While the former method is probably not justified in many cases, the subcutaneous, or preferably intramuscular, injection of magnesium sulphate in doses of from 0.2 to 0.5 Gm. administered in 25 per cent solution two or three times in the twenty-four hours—in gradually increasing quantity up to 8 Gm. a day for the adult—might be tried in rebellious cases.

Salicylate and nonspecific immunization have not given sufficiently definite results to establish themselves in the treatment of chorea; and our knowledge of the cause of the disease is not sufficiently advanced for specific immunization.

ALCOHOLS FOR DEHYDRATING SPECIMENS

To the Editor:—Is there any alcohol other than the absolute ethyl alcohol that may be substituted in dehydrating specimens for microscopic work? If there is any formula or any single dehydrating reagent for tissue that will eliminate the use of absolute alcohol, it would facilitate the work in pathologic laboratories. Please omit my name.

M.D., Pennsylvania.

ANSWER.—Acetone can be substituted fairly satisfactorily for absolute alcohol in the dehydration of tissues preparatory to infiltration with paraffin. After the tissues have been carried through the graded alcohols up to 95 per cent they are transferred to acetone and allowed to remain in it from half an hour to one or two hours, according to the size of the tissue. The acetones should be changed at the end of the first half hour. Care should be used to avoid leaving the tissues in the acetone longer than is necessary for complete dehydration, as it appears to have greater tendency to harden the tissues than alcohol.

MALARIAL TREATMENT OF PARALYSIS

To the Editor:—What is the consensus on the uses of blood from a malarial donor to combat paralysis? In a case in which there is loss of tactile sense on the palmar surface of the fingers and toes, how long till the paralysis is usually complete? Would it be wise to place such a patient on a narcotic treatment? Please omit my name.

M.D., Missouri.

ANSWER.—Inoculation with malaria is being used in the treatment not of paralysis as such but of the form of brain syphilis known as general paralysis. The use of this and other forms of fever-producing remedies in general paralysis was discussed in an editorial in THE JOURNAL, October 23.

The questions contained in the second and third paragraphs are entirely too indefinite to permit even a guess at the diagnosis of the disease condition present; consequently it is impossible to discuss prognosis or treatment.

STEGOMYIA OR AEDES

To the Editor:—In a recent issue of THE JOURNAL, I read that Surgeon General Ireland recognizes, what generally has been recognized by the medical profession in the recent past, *Stegomyia fasciata* as the transmitter of dengue. In the article, the name *Aedes aegypti* is used in place of *Stegomyia fasciata*. On looking up *Aedes aegypti*, I find that it is the present name for *Stegomyia fasciata*. Why this change of name?

HARRIS RICHARD LECRONE, M.D., York, Pa.

ANSWER.—According to William B. Herms in the "Medical and Veterinary Entomology," "Although the yellow fever mosquitoes will long be known under the specific name of *Stegomyia fasciata* Fabr., the species is apparently correctly designated as *Aëdes aegypti* Linn., having stood for several years under the name of *Aëdes calopus* Meig."

FORMULA FOR ROUGE

To the Editor:—Will you kindly give me a formula for a good rouge (cosmetic)?

M.D., Cleveland.

ANSWER.—Rouges are either liquid, paste or rouge sticks. A formula for rouge sticks is:

Carmine, no. 40	150.0 Gm.
Soft white paraffin	550.0 Gm.
Spermaceti	300.0 Gm.
Anisic aldehyde	1.0 cc.

The paraffin and spermaceti are melted and strained, and the carmine is rubbed down with them in a warm mortar. As the mixture cools, it is rolled into sticks of the desired size and cut into lengths. The color can be made brighter by adding zinc oxide to the carmine.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ALABAMA: Montgomery, Jan. 11-14. Chairman, Dr. S. W. Welch, Montgomery.

ARIZONA: Phoenix, Jan. 4. Sec., Dr. W. O. Sweek, 404 Heard Bldg., Phoenix.

DELAWARE: Wilmington, Dec. 14-16. Pres., Dr. H. W. Briggs, Wilmington.

DISTRICT OF COLUMBIA: Jan. 11. Sec., Dr. Edgar P. Copeland, Suite 110, 1801 Eye St., N. W. Washington.

HAWAII: Honolulu, Jan. 10-13. Sec., Dr. A. L. Davis, 1254 Emma St., Honolulu.

INDIANA: Indianapolis, Jan. 11. Sec., Dr. William T. Gott, Crawfordsville.

KENTUCKY: Louisville, Dec. 7. Sec., Dr. A. T. McCormack, Louisville.

MARYLAND: Baltimore, Dec. 14-17. Sec., Dr. Henry M. Fitzhugh, 1211 Cathedral St., Baltimore.

MINNESOTA: Minneapolis, Jan. 4-6. Sec., Dr. A. E. Comstock, 636 Lowry Bldg., St. Paul.

NORTH DAKOTA: Grand Forks, Jan. 4-7. Sec., Dr. G. M. Williamson, Grand Forks.

OHIO: Columbus, Dec. 1-3. Sec., Dr. H. M. Platter, Hartman Hotel Bldg., Columbus.

OREGON: Portland, Jan. 4-6. Sec., Dr. M. K. Hall, 816 Pittock Block, Portland.

SOUTH DAKOTA: Pierre, Jan. 18. Director, Dr. H. R. Kenaston, Bonesteel.

UTAH: Salt Lake City, Jan. 4-5. Director, Mr. J. T. Hammond, 412 State Capitol Bldg., Salt Lake City.

VIRGINIA: Richmond, Dec. 7-10. Sec., Dr. J. W. Preston, 720 Shenandoah Life Bldg., Roanoke.

WISCONSIN: Madison, Jan. 11. Sec., Dr. Robert E. Flynn, 315 State Bank Bldg., La Crosse.

District of Columbia July Examination

Dr. Edgar P. Copeland, secretary of the Board of Medical Supervisors of the District of Columbia, reports the oral and written examination held at Washington, July 13-15. The examination covered 16 subjects and included 80 questions. An average of 75 per cent was required to pass. Of the 49 candidates examined, 44 passed and 5 failed. Three candidates were licensed by reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent
George Washington University Medical School		(1926)	78.9, 82.4, 82.5, 83, 83.1, 83.6, 84.9, 85.8, 86.1, 86.3, 86.7, 88.7, 89.1, 90, 91.7
Georgetown University School of Medicine		(1925) (1926)	88.4, 84.9, 85.3, 86, 88.4, 88.6, 89.4, 89.7, 90, 90.4
Howard University School of Medicine		(1926)	75.1, 75.7, 78.9, 79.3, 81.1, 81.3, 84.3, 84.9, 84.9, 86.1, 87.9
Johns Hopkins University Medical Department		(1926)	85.3
University of Maryland School of Medicine		(1926)	87.6, 88.6
Hahnemann Med. College and Hospital of Philadelphia		(1926)	83.2
Jefferson Medical College of Philadelphia		(1926)	95.2
University of Pennsylvania School of Medicine		(1916) (1920)	83.8, 87.3
Woman's Medical College of Pennsylvania		(1912)	77.6

College	FAILED	Year Grad.	Per Cent
Howard University School of Medicine		(1926)	66.6, 73, 73.3
Meharry Medical College		(1926)	63.9, 73.3

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Johns Hopkins University Medical Department		(1924)	Maryland
University of Tennessee College of Medicine		(1916)	Virginia
Medical College of Virginia		(1924)	Virginia

Pennsylvania July Examination

Mr. C. D. Koch, director of the Professional Education Bureau of the Pennsylvania Board of Medical Education and Licensure, reports the written and practical examination held at Philadelphia and Pittsburgh, July 6-10, 1926. The examination covered 13 subjects and included 130 questions. An average of 75 per cent was required to pass. Of the 310 candidates examined, 306 passed and 4 failed. Eight candidates were licensed by reciprocity and 8 by endorsement of their government credentials. The following colleges were represented:

College	PASSED	Year Grad.	Number Passed
Yale University School of Medicine		(1925)	1
Georgetown University School of Medicine		(1925)	2
Howard University School of Medicine		(1925)	2
Emory University School of Medicine		(1925)	1
Loyola University School of Medicine		(1926)	2
Northwestern University Medical School		(1926)	3

University of Louisville School of Medicine	(1925)	1
Baltimore Medical College	(1903)	1
Baltimore University School of Medicine	(1897)	1
College of Physicians and Surgeons, Baltimore	(1886)	1
Johns Hopkins University Medical Department	(1925)	1
Maryland Medical College, Baltimore	(1912)	1
University of Maryland School of Medicine	(1925)	8
Boston University School of Medicine	(1925)	1
Harvard University	(1924)	2
Tufts College Medical School	(1924)	1
Detroit College of Medicine and Surgery	(1926)	1
University of Michigan Medical School	(1925)	5
University of Minnesota Medical School	(1924)	1
St. Louis University School of Medicine	(1925)	1
University of Buffalo Department of Medicine	(1925)	1
Eclectic Medical College, Cincinnati	(1925)	1
Ohio State University College of Medicine	(1924)	1
University of Oklahoma School of Medicine	(1925)	1
Hahnemann Medical College and Hospital of Philadelphia	(1922), (1925)	31
Jefferson Medical College of Philadelphia	(1896, 1), (1922, 2), (1923, 1), (1924, 11), (1925, 65)	80
Temple University Department of Medicine	(1923, 1), (1924, 1), (1925, 34)	36
University of Pennsylvania School of Medicine	(1923, 1), (1924, 12), (1925, 37)	50
University of Pittsburgh School of Medicine	(1925)	37
Woman's Medical College of Pennsylvania	(1925)	7
Vanderbilt University School of Medicine	(1923)	1
University of Vermont School of Medicine	(1925)	2
Medical College of Virginia	(1924)	1
Queen's University Faculty of Medicine	(1923), (1924)	2
University of Toronto Faculty of Medicine	(1923, 3), (1924, 4), (1925, 2)	9
University of Western Ontario	(1925)	2
McGill University Faculty of Medicine	(1925)	2
University of Naples, Italy	(1921), (1922)*	2
University of Berne, Switzerland	(1922)*	1
University of Constantinople, Turkey	(1918)*	1

FAILED

College	Year Grad.	Number Failed
Howard University School of Medicine	(1925)	1
Temple University Department of Medicine	(1925)	2
University of Pittsburgh School of Medicine	(1925)	1

LICENSED BY RECIPROCITY

College	Year Grad.	Reciprocity with
State University of Iowa College of Medicine	(1905)	Iowa
University of Maryland Sch. of Med.	(1901), (1920), (1922)	Maryland
Boston University School of Medicine	(1918)	Mass.
University of Minnesota Medical School	(1924)	Minnesota
University and Bellevue Hospital Medical College	(1899)	New York
University of Pennsylvania School of Medicine	(1920)	W. Virginia

ENDORSEMENT OF CREDENTIALS

College	Year Grad.	Endorsement with
Johns Hopkins University Medical Department	(1924)	N. B. M. Ex.
Jefferson Medical College of Philadelphia	(1924)	N. B. M. Ex.
University of Pennsylvania School of Med.	(1918), (1921)	N. B. M. Ex.
Woman's Medical College of Pennsylvania	(1924, 3), (1925)	N. B. M. Ex.

* Verification of graduation in process.

Georgia June Examinations

Dr. C. T. Nolan, secretary of the Georgia Board of Medical Examiners, reports the written examinations held at Augusta, June 1-3, and Atlanta, June 9-11, 1926. The examinations covered 10 subjects and included 100 questions. An average of 80 per cent was required to pass. Seventy-six candidates were examined, all of whom passed. Seventeen candidates were licensed by reciprocity and one by endorsement of credentials. The following colleges were represented:

PASSED

College	Year Grad.	Number Passed
Howard University School of Medicine	(1925)	1
Emory University School of Medicine	(1926)	44
University of Georgia Medical Department	(1926)	24
Tulane University of Louisiana School of Medicine	(1925)	1
Harvard University	(1924)	1
Jefferson Medical College	(1926)	1
Meharry Medical College	(1926)	2
University of Toronto Faculty of Medicine	(1916) 1, (1923)	1

LICENSED BY RECIPROCITY

College	Year Grad.	Reciprocity with
Georgetown University School of Medicine	(1924)	Dist.Colum.
Rush Medical College	(1894)	Iowa
State University of Iowa College of Medicine	(1922)	Iowa
Kentucky School of Medicine	(1899)	Tennessee
University of Louisville School of Medicine	(1892)	Tennessee
Tulane University of Louisiana School of Medicine	(1921)	Louisiana
College of Physicians and Surgeons, Baltimore	(1913)	Maryland
Johns Hopkins University Medical Dept.	(1921), (1922)	Maryland
Maryland Medical College	(1912)	Penna.
Barnes Medical College	(1898)	Missouri
John A. Creighton Medical College	(1907)	Iowa
Hahnemann Med. College and Hosp. of Philadelphia	(1890)	Penna.
University of Pennsylvania School of Medicine	(1899)	Penna.
University of Tennessee College of Medicine	(1925, 2)	Tennessee
University of Vermont College of Medicine	(1908)	Vermont

ENDORSEMENT OF CREDENTIALS

College	Year Grad.	Endorsement with
Yale University School of Medicine	(1923)	N. B. M. Ex.

Social Medicine

THE UNITED CHARITIES OF CHICAGO AS A PROMOTER OF HEALTH MEASURES

SCOTT E. W. BEDFORD
Research Secretary, United Charities of Chicago
CHICAGO

Fundamental to the social adjustment of any family, and particularly those of the underprivileged group, is the treatment of illness, the correction of physical defects, and the establishing of good health habits. The first steps in the process, namely, discovering the illness and giving medical advice, are relatively simple, but persuading the patients to act on this advice and to follow the treatment outlined, together with the change of diet, self-control and self-sacrifice incident thereto, either for themselves or their children, is a long arduous task and necessitates unremitting efforts over long periods of time, requiring resourcefulness and persuasive powers on the part of the family case worker.

Recently, a careful study was made of the case records of 184 families that had been under treatment for an extended time, by the United Charities of Chicago. Among other points, held in mind as these records were studied, were the changes that took place during the period of treatment. One series of changes noted was in the field of health. Our attention can be well directed to these interesting changes.

The case records were gone over carefully in the effort to find which members of the family were in ill health or had some physical defect at the time they became known to the United Charities, and what changes in physical condition took place before the United Charities' contact ceased.

PERSONS IN GOOD HEALTH

In an effort to determine what changes took place in the health of the members of the family during the time the United Charities was in touch with them, the information presented in table 1 was tabulated.

TABLE 1.—*Persons in Good Health*

	At Time of First Contact, %	At Time of Last Contact, %	Gain During Time of Contact, %
All families	48.6	69.0	20.4
Italian	71.6	84.9	13.3
Polish	59.1	72.2	13.1
Other foreign born	44.3	67.9	23.6
Negro	49.9	65.8	15.9
American white	36.8	58.4	21.6

This gain in number of persons in good health was brought about through the discovery and treatment of chronic illness, remediable defects and undernourishment, aided in some cases by better living conditions, by dietary habits and by release from worry. The part taken by the United Charities' worker in families not already under the care of a health agency was in the discovery of indications of ill health: directing the clients to the medical agency which seemed best fitted to their needs; inducing them to take the steps advised for their recovery, and making it possible, both financially and otherwise, for them to follow directions given by physicians and nurses.

REMEDIABLE DEFECTS

Under remediable defects were classed defective tonsils, teeth and eyes; also other conditions, such as appendicitis, deviated septum, hernia, tumor, and hemorrhoids in cases in which it was advised that an operation would correct the difficulty, or such conditions as flatfoot and some eye and ear difficulties which could be overcome by treatment. The

corrections counted were removal of tonsils, repair or replacement of teeth, glasses which corrected poor vision, a successful operation for appendicitis, hernia or tumor or successful treatment for flatfoot or an abnormal condition of eyes and ears.

Remediable Defects Among Adults.—A comparison of the remediable defects discovered among adults in the families who made their first contact in 1923 with the earlier ones showed a slight decrease (table 2).

TABLE 2.—*Remediable Defects Among Later and Among Earlier Families*

	Previous to 1923	During 1923
Number of families	102	82
Number of adults	167	118
Number of defects	48	32
Number of defects per hundred adults	29.0	27.8

The preponderance in the older contacts might be due to the fact that contact with many of them lasted over a number of years, when such defects as carious teeth, hemorrhoids and hernia could develop, while contact with the 1923 group was, at the longest, for nineteen months. Further, the preponderance may be explained by the operation of health agencies tending to raise the standard of public health.

Table 3 shows the remediable defects discovered in the different nationality groups:

TABLE 3.—*Number of Remediable Defects per Hundred Persons*

		Defects	Per Hundred
American negro—among	117 persons	52	44.4
American white—among	269 persons	94	34.9
Italian—among	127 persons	25	19.7
Polish—among	172 persons	29	16.8
Other foreign born—among	318 persons	96	30.2
	1,003	296	29.5

These numbers are, of course, too small to have much value as a measure of remediable defects actually present in the different groups, but they suggest the need of more careful attention to the foreign-speaking families. How much of the variation in the different nationality groups may be due to the difficulty of inducing many foreign-born families to accept the free medical service offered in the city, it was impossible to estimate. Italians and Poles are inclined to be distrustful of the free service, and often say that they wish to wait until they can pay for a physician. Naturally, they are inclined to prefer one who can speak their own language. With the negro and the native white families there is no barrier of language at the free clinics, and it is easier to persuade them to attend.

The comparatively high rate of defects found in the negro families may be due to the fact that one third of them had come less than two years before, from parts of the South where public health work is comparatively undeveloped.

Among Children.—Of the remediable defects, 73.4 per cent were found in children (table 4).

TABLE 4.—*Number of Remediable Defects per Hundred Children*

	Previous to 1923	During 1923
Number of families	102	82
Number of children	408	320
Number of defects	93	130
Number of defects per hundred children	22.8	40.6

This increase in the number of defects, discovered among the children in the families, can hardly be ascribed to an increase in the defects present, but must mean that an examination of all children who give any indication of abnormal physical conditions is secured more frequently than formerly. Since 1923, all children have been examined.

The 1923 records also show a higher rate of correction of these defects. Contact with twenty-nine of the eighty-two families had ceased, and they were not left in the care of another organization. Three were receiving mother's pensions, and so would be looked after by the officers of that department of the juvenile court.

Among the fifty of the 1923 families still receiving care from the United Charities were ninety-four diagnosed remediable defects of children. Seventy of these had been corrected, and one was placed under treatment, 75.5 per cent receiving the necessary attention at the time the record was studied.

Among the children of the twenty-nine families, twenty-nine defects had been discovered. When the contact with the United Charities ceased, twenty-seven of these had been corrected and one was being treated—a total of 96.5 per cent cared for.

Parents had refused treatment for three of the children in the families receiving a mother's pension, but with the granting of pension, responsibility for persuading them to give the children the necessary medical attention was left with the juvenile court.

Among the 102 families whose contacts were earlier than 1923 and who were not left in the care of other case workers, ninety-one defects in children were discovered. Two of these families, each with a child having an uncorrected defect, received a mother's pension. When the record was closed, seventy-five of these defects had been corrected and seven more were under treatment—a total of eighty-two, or 90.1 per cent which had been cared for, in comparison with 96.5 per cent in the 1923 group.

In comparing the discovery of remediable defects as well as the corrections in these two groups of families before 1923 and during 1923, consideration must be given to the comparative length of time under care. Contact with many of the families in the older group was broken and resumed a number of times, and each contact presented an opportunity for pressing the client to take the steps necessary to get into better physical condition. For the 1923 group there had been only one period of contact with the families. This advantage in working with the older groups of families is no doubt partly responsible for the corrections of remediable defects in adults, being 13.4 per cent higher with them than with the 1923 contacts. In spite of this handicap, the corrections for children, on the other hand, were 6.4 per cent higher in the recent records, while 78 per cent more defects had been discovered. This indicates that health work with adults developed earlier than with children, and that in recent years children are receiving a comparatively larger share of attention in this respect than their parents.

Malnutrition.—Since 1921, the Elizabeth McCormick Memorial Foundation has conducted nutrition clinics for nine of the ten districts of the United Charities. The children of the tenth district were cared for by the Northwestern University Dispensary. Four or five times each year since 1922, a physician has attended each clinic and examined the children; so since that time a much more prompt discovery of physical defects, as well as malnutrition, has been possible. This service was available for all the families whose first contact was in 1923 and for some of the older families. The increase in instances of malnutrition found among the recent cases marks, no doubt, an increasing awareness on the part of the workers of the problems of nutrition, with greater emphasis on induc-

ing the families to take advantage of the service offered by the foundation, rather than an actual increase in the number of undernourished children among the families served by the United Charities.

Malnutrition and Nationality Group.—When the extent of the undernourishment was known, it was of widely different degrees. The five G. children, for instance, were 18, 12, 10.1, 5 and 4.1 per cent under normal weight. Three of the six L. children were 16, 14 and 13 per cent below. Others were only 1 or 2 per cent below the average weight of normal children.

TABLE 5.—*Undernourished Children*

Nationality	Number of Children	Number Undernourished	Number Undernourished per Hundred Children
Italian	92	8	8.7
Polish	129	21	16.3
Other foreign born	233	32	13.3
American white	189	21	11.1
Negro	85	14	16.4
Total	728	96	13.2

In table 5, all the children were classed as undernourished who were graded as 7 per cent or more under normal weight by the Elizabeth McCormick Memorial Foundation Clinic, and those who were reported undernourished, with no information of the extent, by the Municipal Tuberculosis Sanitarium and other dispensaries, and by private physicians. All children, whether in the group of 1923 contacts or earlier contacts, were included.

It was not surprising that the Polish children, who are likely to share the diet of their elders—much meat, few vegetables, and little fruit or milk—should be high in the list of undernourished. Negro children, also, more than other children of the poor, are perhaps likely to suffer from an irregular food supply, as a result of the precarious employment of the negro laborer. That the Italians had the lowest proportion of undernourished children is perhaps due to diet somewhat better adapted to children than that of many of the other foreign-born families.

In comparing the families whose first contact was in 1923 with those who appealed earlier, we have the results shown in table 6.

TABLE 6.—*Malnutrition in Earlier and Later Families*

	Contacts	
	Previous to 1923	During 1923
Number of families	102	82
Number of children	408	320
Instances of undernourishment	45	51
Instances of undernourishment per hundred children	11.0	15.9

Treatment of Malnutrition.—Among older contacts were forty-five undernourished children. Of these, ten had reached normal weight before the close of contact, ten had improved, and fourteen additional children were under treatment. Two children were in a family receiving a mother's pension, so that ten children were undernourished at the time contact closed, and were not left in the care of another agency or nutrition class. Thirty-five, or 77.7 per cent, had received attention.

Among the families in the 1923 group whose contact with the United Charities was ended were 131 children, ten of whom were known to have been undernourished. One of these had reached normal weight, and six were under treatment at a nutrition clinic. All of the three who were not connected with a nutrition clinic were in two families with whom the United Charities' contact ceased because supervision was taken over by the Mother's Pension Department. All undernourished children in families where contact ceased without responsibility being assumed by another agency were under the care of a nutrition clinic.

CHRONIC ILLNESS

The instances of illness listed as chronic were: tuberculosis, 100; venereal disease, twenty-six; heart disease, fourteen; goiter, twelve; rheumatism, ten; nephritis, ten, and miscellaneous, thirty-two.

Under miscellaneous diseases were included asthma, arthritis, eczema, rickets, chronic diseases of the ears and eyes, osteomyelitis, epilepsy, Banti's disease, gallstones, varicose veins, tumor of the bladder, dropsy, sclerosis of the liver, paralysis, locomotor ataxia, and bronchitis. An operation had been advised for gallstones, and in two instances for lacerated uterus. When the patient refused an operation, and treatment was substituted, these were listed as chronic illnesses.

The instances of chronic illnesses given in table 7 appeared in the different nationality groups.

TABLE 7.—*Chronic Illnesses Among Different Nationalities*

Nationality	Number of Persons	Instances of Chronic Illness	Instances per Hundred Persons
Native white	309	64	20.7
Negro	117	32	27.3
Polish	172	24	14.0
Italian	127	23	18.1
Other foreign born	318	71	22.3

Table 8 shows a comparison of the discovery of recent chronic illness with that in older contacts.

TABLE 8.—*Recent Chronic Illness*

	Contacts	
	Previous to 1923	During 1923
Number of families	102	82
Number of persons	605	438
Instances of chronic illness	139	75
Instances of chronic illness per hundred persons	23.9	17.1

The decreased number of instances in the 1923 contacts represented a decrease in the number of persons having tuberculosis. Of the 100 cases of tuberculosis, seventy were among the older contacts and only thirty were among the newer. Omitting tuberculosis, there was left almost the same number of instances of chronic illness—twelve per hundred persons in the newer group, and ten per hundred persons in the older group.

Among the thirty-two families who made their first contact with the United Charities in 1923, and in which the case was closed when studied, there were thirty instances of chronic illness. Of these, twenty-six had been placed under treatment; four of the patients had recovered, four had died, three had left town, and the others were continuing under medical care. Of the four persons not placed under treatment before contact ceased, three were in two families taken over by the mother's pension department of the juvenile court. In families in which contact had ceased and no other agency had taken responsibility for their welfare, twenty-six out of twenty-seven instances, or 96.2 per cent, were connected with a medical agency. Of the 125 cases of chronic illness among the older contacts, six were in families which had been granted a mother's pension. Of the 119 cases in families in which the United Charities' contact had ceased and no other case-working agency had taken responsibility for their wel-

fare, 105, or 88.2 per cent, had received medical attention. Of these, eighteen patients had recovered; twelve had died, and seventy-five were still under treatment.

ACUTE ILLNESS

Acute illness constituted the remaining health problem. During the contact of the United Charities with the 184 families, 151 cases of acute illness occurred, sixty-one among adults and ninety among children. Five children had died and the rest had recovered. There were no instances of acute illness at the time contact with the families ceased, because the presence of such a condition would have constituted a reason for keeping in touch with them until the illness was over.

It should be made clear that the work of health improvement, so far as the United Charities is concerned, often consists not in bringing about the improvement itself but in referring the sick to other agencies, which actually do the expert work.

DIVISION OF WORK BETWEEN SOCIAL AGENCIES

The correlation of work between the United Charities and the medical agencies is illustrated by the case histories of the following families:

CASE 1.—A cousin appealed for help for Mrs. A., an Italian, when her husband died in 1923. There were four small children, and Mrs. A. was pregnant. On the second visit, the case worker secured Mrs. A's. promise that she would register with the Chicago Lying-In Hospital Dispensary for prenatal and confinement care. Two weeks later, she began talking to the mother about having David, then aged 3, whose legs were badly bowed, examined at the home for Destitute Crippled Children. At first, Mrs. A. refused on the ground that 6-year-old Carmella's legs had been like that, and they had grown straight without treatment. Her objections were finally overcome, and in less than three weeks the child entered the hospital. The next day, Mrs. A. went to the case worker in great excitement to say that she must take him home; her dead husband had appeared to her in a dream and told her that he must not be left in the hospital. For several days both the officials of the hospital and the case worker were kept busy soothing her fears. After that she was contented to leave him, and he was discharged at the end of nine months with straight legs.

CASE 2.—There was still greater difficulty in inducing Mrs. C., listless from low physical vitality and discouraged by Mr. C's. drinking, to use the agencies available to her for the care of her own bad teeth, and for advice concerning the irritable, restless children. During the four months which it took to persuade her to take the ill-fed baby to the Infant Welfare Society, Mr. C. was taken acutely ill and sent to the Cook County Hospital, where he was found to have a venereal infection. There was then the added task of keeping him under treatment after the acute attack was over, of securing an examination of Mrs. C. and the treatment she was found to need. Each of the early visits to the dispensary was made only after much urging.

CONCLUSION

It may be stated that often the people who most need medical assistance are not acquainted with the fact and do not know how to secure it. Socially minded physicians, together with institutions supported by public taxes and private benevolences, may be at the service of the sick, but an agency like the United Charities, acting as a go-between, renders a valuable service in bringing the need and the supply together. It also persuades those who have disease in its incipient stages to regard it seriously by taking treatment before much headway in the progress of the disease has been gained. In other words, the United Charities discovers the existence of diseases and uses the community agencies to remedy them.

308 North Michigan Avenue.

Book Notices

A HEALTH EDUCATION PROCEDURE: For the Grades and Grade Teachers. By Kathleen Wilkinson Wootten (Mrs. Henry Stewart Wootten), Professor of Health, Georgia State College for Women, Milledgeville, Ga. Cloth. Pp. 420, with illustrations. New York: National Tuberculosis Association, 1926.

The author, who is professor of health in the Georgia State College for Women, has assembled from many sources material of value in teaching health to children. The National Tuberculosis Association, convinced of the practical nature of the work, has issued this volume as a guide to teachers in the field. The book covers every aspect of the health problem in the school, from that of the teacher herself and the health supervision of the child to safety education, personal hygiene, posture, and speech defects. The author recognizes that the ideal place for sex instruction is in the home, but realizes that few parents are properly informed and that the schools themselves must work out proper limitations for such instruction by teachers. A special section of the book includes graded courses of study and material of value for the classroom. It is a pity that the author has never heard of a periodical called *Hygeia*, published by the American Medical Association, or that she so carefully avoids mentioning it if it happens to have been brought to her attention.

THE NATIONAL GOVERNMENT AND PUBLIC HEALTH. By James A. Tobey, M.S., LL.B. The Institute for Government Research, studies in administration. Cloth. Price, $3. Pp. 423. Baltimore: Johns Hopkins Press, 1926.

All the various departments of our government seem to have some health functions. The problem is one that has given concern both to statesmen and to students in the care of public health for many years. As in all such matters, the necessity for a clear understanding of existing functions before adequate solution, greater efficiency and the avoidance of duplication of effort can be achieved, is obvious. Such a survey is here presented as a thesis toward a doctor's degree in public health. Simultaneously the work is an official document for the use of a special committee which has been considering the coordination of the health functions of the national government. The book begins with an historical account of public health in the United States, including the views of various presidents, congressional enactments, Supreme Court decisions, and the relation of local and state functions to the federal government. It then presents an analysis of all existing federal health activities and a plan for their correlation. The volume provides valuable material for all of those interested in public health administration from either the medical or the governmental point of view.

ENTWICKLUNG UND BIBLIOGRAPHIE DER PATHOLOGISCH-ANATOMISCHEN ABBILDUNG. Von Edgar Goldschmidt, Prosektor am Senckenbergischen Pathologischen Institut und Professor an der Universität Frankfurt a. M. Leather. Price, 150 marks. Pp. 301, with 44 plates. Leipsic: Karl W. Hiersemann, 1925.

This volume could not conceivably have been published by an American publisher. It indicates a mastery of typography and a sympathetic consideration for the arts and for the history of medicine that are as yet quite infrequent in our busy nation. In his preface, Dr. Goldschmidt indicates that this book is in a sense supplementary to the Choulant "History of Anatomical Art," Sudhoff's contributions to history, and Hollander's volumes on medicine, sculpture and art. A brief historical essay on pathologic and anatomic art is followed by a bibliography of the subject, with historical notes of great value, concerning the type of illustrations that have appeared in medical volumes and the artists responsible for their production. The volume concludes with indexes to illustrations of importance, and with forty-four plates of magnificent reproductions from ancient and modern literature, the best of their type that have come to our attention. As a demonstration of the ancient character of man's sufferings and of his ability to portray them artistically, this collection is supreme.

PRINCIPLES OF MEDICAL TREATMENT. By George Cheever Shattuck, M.D., A.M., Assistant Professor of Tropical Medicine, Harvard Medical School. Sixth edition. Cloth. Price, $3.50. Pp. 256. Cambridge: Harvard University Press, 1926.

In this edition of this popular handbook, chapters on asthma, syphilis, lead poisoning, anemia, endocrine disorders and vaccine therapy are new. Other chapters have been thoroughly modified. The book is a careful presentation of our knowledge of the treatment of many common diseases, using standard methods of treatment and avoiding bad therapeutic habits. It is written in clearly understandable and simple language, and should be a useful guide to any practitioner. The statement of the position which the physician should assume as prepared by Dr. John B. Hawes is a succinct guide of practical value. The section on endocrine disorders is properly limited largely to the thyroid, pituitary and suprarenal glands and the ovary, and follows in general the status set forth in the collection called "Glandular Therapy" issued by the Council on Pharmacy and Chemistry of the American Medical Association. The section on vaccine therapy likewise serves to establish the general concurrence of scientific opinion as to the limited usage of such products.

OPIUM THE DEMON FLOWER. By Sara Graham-Mulhall. Cloth. Price, $2. Pp. 310. New York: Harold Vinal, 1926.

The author was formerly first deputy commissioner in the department of narcotic drug control in New York. In the present volume she presents many facts regarding the uses of opium and morphine, complicated, however, by distinct prejudices resulting from her intimate contact with persons suffering from addiction. The book opens with an account of the drug addicts seen in the clinic, and with special chapters on children and intellectual addicts. Another section of the book is devoted to cocaine and to a study of the psychology of drug addiction. The author feels that there is no cure for drug addiction except complete prohibition of opium and cocaine. It is, of course, for men to decide in this instance whether or not all ought to be made to suffer because of the incompetent, weak-willed and inadequate few. Mrs. Graham-Mulhall analyzes the position of America in relation to the problem of drug addiction, and concludes with a chapter on how the nations of the world may cooperate to control the drug evil. There is much of interest and importance in this volume, which, regardless of its somewhat sensational tone, is in general sound.

DYSTROPHIEN UND DURCHFALLSKRANKHEITEN IM SÄUGLINGSALTER: Ihre Beurteilung und Behandlung mit einfachen Methoden. Wegweiser für den praktischen Arzt. Von Dr. Leo Langstein, Präsident des Kaiserin-Auguste-Victoria-Hauses. Paper. Price, 14 marks. Pp. 207, with 149 illustrations. Leipsic: Georg Thieme, 1926.

In a scientific environment in which books are published in profusion, often for no very good reason, it is gratifying to find a publication prepared for a purpose. The author occupies the chair in Berlin which concerns itself with the mortality of infants and young children. The institution established for this need consists of a model hospital, a laboratory and research division, and an unequaled museum for professional and lay instruction. Langstein realizes that the product of such a special institute will be lost to the ultimate public unless the intervening practitioner is first informed. Therefore, this book is a logical enterprise parallel with the museum for making available to him the conclusions reached from the intricate charts and complicated protocols in which special pediatric literature abounds. The subjects of dystrophy and diarrheas are considered with emphasis on their management by simple methods which the general practitioner is equipped to carry out. Langstein heartens his practicing colleague by saying that all he needs in infant feeding are human milk, animal milk, water, sugar and buttermilk. Langstein is the protagonist of infant welfare methods. He describes clearly how the general make-up of an infant may be determined by general inspection, weighing, measuring, turgor and tonus examinations, and illustrates by charts and excellent photographs. Especially noteworthy is a simple and ingenious method of tonus determination. There is a warning that infants in eutrophy are not necessarily healthy babies, as visceral pathologic conditions may be present and Pirquet and Wassermann reactions may be positive. He outlines the factors involved in the proper development of an infant: constitution, birth, feeding, care and environment, and freedom from disease. From a consideration of such fundamental data he proceeds equally logically and clearly to the discussion of dystrophies and diarrheas, always emphasizing simple methods of management. Numerous illustrative cases are cited in the section on diarrheas, although the charts do not always appear to demonstrate the point of the text, as more than one factor is changed before the given result follows. With due allowance for the general excellence and scholarliness of the material presented, the comment must be made that striking and thereby conspicuous is the absence of any mention of Finkelstein or his albumin milk, without which medically and historically any discussion of this sort is incomplete. The conclusion is driven home that there has been deliberate nose tilting at an epoch-making discovery in infant feeding which has decisively reduced infant mortality. A discussion of dystrophies and diarrheas minus Finkelstein and albumin milk is tantamount to a discussion of syphilis minus Ehrlich and arsphenamine. The youth who would lightly banish albumin milk would be considered heroically smart or simply stupid. The contemporary colleague who shuts his eyes to albumin milk is strangely reminiscent of the ostrich who buries his brain in the sand while his tail feathers wave to the whim of dystrophies and diarrheas.

Books Received

Books received are acknowledged in this column, and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. Selections will be made for more extensive review in the interests of our readers and as space permits.

THE ABDOMEN IN LABOUR: Being a General Practitioner's Clinical Study of the Parturient Abdomen. By Norman Porritt, M.R.C.S., L.R.C.P., Consulting Surgeon, Huddersfield Royal Infirmary. The Essay to which was awarded the Sir Charles Hastings prize of the British Medical Association, 1926. Cloth. Price, $1.75. Pp. 76, with 29 illustrations. New York: Oxford University Press, 1926.

Monograph of the observations of a general practitioner on an important clinical study.

HISTOLOGICAL TECHNIQUE: For Normal Tissues, Morbid Changes and the Identification of Parasites. By H. M. Carleton, M.A., B.Sc., D.Phil., University Lecturer in Histology, Oxford. Chapters VII. and VIII. in collaboration with Frederic Haynes, B.A., Demonstrator of Histology. Cloth. Price, $5. Pp. 398, with 17 illustrations. New York: Oxford University Press, 1926.

A well-written and easily readable textbook representing the Oxford technic.

KONSTITUTIONSPATHOLOGIE IN DER OHRENHEILKUNDE. Von Dr. Julius Bauer, a. o. Professor an der Universität und Dr. Conrad Stein, Privatdozent an der Universität Wien. 2. Heft von Konstitutionspathologie in den medizinischen Spezialwissenschaften. Herausgegeben von Julius Bauer. Paper. Price, 24 marks. Pp. 340, with 58 illustrations. Berlin: Julius Springer, 1926.

Anomalies and hereditary defects associated with diseases of the ear.

PRINCIPLES OF DIAGNOSIS AND TREATMENT IN HEART AFFECTIONS. By Sir James Mackenzie, M.D., F.R.S., F.R.C.P., Director St. Andrew's Institute for Clinical Research, and James Orr, M.B., Ch.B., Physician to the St. Andrew's Institute for Clinical Research. Third edition. Cloth. Price, $3.50. Pp. 242, with 37 illustrations. New York: Oxford University Press, 1926.

A medical classic revised by a colleague of its noted author.

MODERN SCIENCE AND PEOPLE'S HEALTH. Edited by Benjamin C. Gruenberg. Contributing Authors, Charles R. Stockard, Hugh S. Taylor, Walter H. Eddy, William A. White, C. E. A. Winslow and Haven Emerson. Cloth. Price, $2.50. Pp. 250, with illustrations. New York: W. W. Norton & Company, Inc., 1926.

Exceptional essays revealing the best that science is doing in health education.

TRANSACTIONS OF THE SIXTH BIENNIAL CONGRESS OF THE FAR EASTERN ASSOCIATION OF TROPICAL MEDICINE HELD AT TOKYO, 1925. Volume 1. Cloth. Pp. 1197. Tokyo: Kyorinsha Medical Publishing Co., 1926.

BEHRINGWERKMITTEILUNGEN. Von E. v. Behring. Heft 5. Die Lipotrentherapie der Tuberkulose. Von Direktor Dr. Kurt Klare, Leitender Arzt der Prinzregent-Luitpold-Kinderheilstätte Scheidegg. Paper. Pp. 51, with illustrations. Marburg-Lahn, Selbstverlag der Behringwerke, 1926.

Research on a new German synthetic drug used in tuberculosis.

LIFE INSURANCE MEDICINE. A Study of Some of Its Problems and Their Relation to Clinical Medicine. By Members of the Medical Department of the New England Mutual Life Insurance Company. Volume I. Cloth. Pp. 219, with illustrations. Boston: New England Mutual Life Insurance Company, 1926.

Fundamental essays on problems associated with the prolongation of life.

THE CARRIER PROBLEM. By K. C. Paul, M.B.B.S. With Foreword by David Nabarro, M.D., F.R.C.P., Director of the Research and Pathological Laboratories, The Hospital for Sick Children. Cloth. Price, $1.75. Pp. 102. New York: Oxford University Press, 1926.

Analysis of the transmission of disease by human and other disease carriers.

DER HEUTIGE STAND DER LEHRE VON DEN GESCHWÜLSTEN. Von Professor Dr. Carl Sternberg. Abhandlungen aus dem Gesamtgebiet der Medizin. Second edition. Paper. Price, 7,50 marks. Pp. 136, with 21 illustrations. Vienna: Julius Springer, 1926.

New edition of German monograph on our present knowledge of tumors.

THE PATHOLOGY AND TREATMENT OF DIABETES MELLITUS. By George Graham, M.A., M.D., F.R.C.P., Assistant Physician, St. Bartholomew's Hospital. Second edition. Cloth. Price, $2.75. Pp. 230. New York: Oxford University Press, 1926.

New edition to which the discoveries of the last three years have been added.

HUNTER TOD'S DISEASES OF THE EAR. Revised by George C. Cathcart, M.A., M.D., Consulting Surgeon to The Throat Hospital, Golden Square. Second edition. Cloth. Price, $3.50. Pp. 333, with illustrations. New York: Oxford University Press, 1926.

New edition of a standard compendium of otology.

OBSTETRICS. By John S. Fairbairn, M.A., B.M., B.Ch., Obstetric Physician, St. Thomas's Hospital Cloth. Price, $1.75. Pp. 221, with 29 illustrations. New York: Oxford University Press, 1926.

A pocket-size guide to minimum requisite knowledge of obstetrics.

THE HEART. By Alexander George Gibson, D.M., F.R.C.P., Physician to the Radcliffe Infirmary. Cloth. Price, $1.50. Pp. 108, with 15 illustrations. New York: Oxford University Press, 1926.

Main principles of cardiology according to ideas established by Mackenzie.

FATALISM OR FREEDOM: A Biologist's Answer. By C. Judson Herrick of The University of Chicago. Cloth. Price, $1. Pp. 96, New York: W. W. Norton & Company, Inc., 1926.

Monograph correlating anatomy of the brain with knowledge of behavior.

LES PANCRÉATITES AIGÜES CHIRURGICALES. Par Pierre Brocq, chirurgien des hôpitaux. Paper. Price, $1. Pp. 188, with illustrations. Paris: Masson & Cie, 1926.

Monograph based on twenty case reports and extensive bibliographic study.

MYTH IN PRIMITIVE PSYCHOLOGY. By Bronislaw Malinowski, Ph.D., D.Sc. Cloth. Price, $1. Pp. 94. New York: W. W. Norton & Company, Inc., 1926.

How men reveal themselves in fairy-tales, demonstrated by a study of Melanesians.

OBESITY. By Leonard Williams, M.D. Cloth. Price, $3.35. Pp. 171, with 20 illustrations. New York: Oxford University Press, 1926.

A pleasant consideration of our knowledge of fatness.

THROMBO-PHLERITE INFECTIEUSE DU SINUS CAVERNEUX ET LÉSIONS ASSOCIÉES SEPTIQUES ET TRAUMATIQUES DES SINUS VENINEUX DE LA BASE: Avec contribution spéciale de la forme chronique de l'affection du sinus caverneux sans exophthalmie ou chemosis. Étude clinique de l'infection veineuse. Par Wells P. Eagleton, M.D., Directeur médical à l'Infirmerie de l'œil et des oreilles à Newark. Paper. Price, $1. Pp. 158. Paris: Masson & Cie, 1926.

LE PROBLÈME DES FERMENTATIONS: Les faits et les hypothèses (Monographies de l'Institut Pasteur). Par M. Seluœn, chef de laboratoire à l'Institut Pasteur. Préface de A. Fernbach, Professeur à l'Institut Pasteur. Paper. Pp. 199, Paris: Masson & Cie, 1926.

REPÚBLICA ARGENTINA: TERCER CONGRESO NACIONAL DE MEDICINA. Buenos Aires, 1926. Actas y trabajos. Tomo 1. Sesiones Generales.—Relaciones y trabajos sobre paludismo. Paper. Pp. 717, with illustrations. Las Ciencias, 1926.

Medicolegal

"Consumption, Paralysis or Heart Disease," in Policy

(Southern Ins. Co. v. Wilson (Ala.), 108 So. R. 5)

The Supreme Court of Alabama says that the policy of life insurance sued on in this case stipulated that in case death resulted within twelve months from "consumption, paralysis or heart disease," liability was limited to one-half the face of the policy. The use of the word "paralysis," along with "consumption" and "heart disease," indicated an intent to cover risks from somewhat chronic conditions, obscure, perhaps, at the time, but developing into fatal results within a year. Whether it should include cerebral hemorrhage, more aptly called apoplexy, or be limited to the chronic disorders called palsy among the laity, the court does not find it necessary here to decide. The testimony of a physician was to the effect that the insured was brought to the hospital in an unconscious condition, one side paralyzed; that he continued unconscious or semiconscious until his death about a week thereafter; and that he died of hemorrhage of the brain. There was also evidence that the insured was not sick, but was hurt or injured on his way to work. If cerebral hemorrhage, apoplexy and resultant paralysis were caused by a shock, death would be referred to the original cause, not to apoplexy or paralysis within the meaning of this contract. The jury returned a verdict for the full amount of the policy, and judgment thereon is affirmed.

Roentgenograms, Objective Symptoms and Examination

(Reeder v. Thompson et al. (Kan.), 245 Pac. R. 127)

The Supreme Court of Kansas, in affirming a judgment for $4,935 for personal injuries sustained by a coal miner, says that the defendants contended that the award was improper under the provision of the workmen's compensation law of that state that "in no case shall a lump sum judgment be rendered for any injury not ascertainable by objective examination," it being insisted that roentgenograms do not constitute an objective examination. But this court holds that a physical examination of an injured employee, in which the injuries are ascertained in part from ordinary observation, and in part with the aid of a roentgen-ray instrument, is an objective examination within the meaning of such law, and a lump sum judgment may be rendered for an injury so ascertained. Objective symptoms are those which the physician by the ordinary use of his senses discovers from a physical examination, while subjective symptoms are those which he learns from the expressions of the patient. What he discovers through his vision, aided by magnifying glasses or a roentgen-ray instrument, are objective symptoms. By the use of the roentgen ray, a view may be had of internal conditions not perceivable by the ordinary or unaided senses. The sense of sight is enlarged by its use, and, although a recent invention, its use is now common, and what it reveals is generally recognized and accepted. Of course, the instrument should be one that is trustworthy, and the operator competent.

Distinction as to Liability for Aniline Poisoning

(Sokol v. Stein Fur Dyeing Co. et al. (N. Y.), 216 N. Y. Supp. 167)

The Supreme Court of New York, appellate division, third department, in reversing an award of $800 made by the state industrial board for forty weeks' compensation for a dermatitis which disabled the claimant in respect to the use of his hands, says that he sought compensation on the ground that he suffered from an occupational disease within the provisions of the workmen's compensation law of that state. The claimant contended that he suffered from aniline poisoning; but, as the court construes the law, to recover compensation, he must have been poisoned by aniline while engaged in a process involving the use of aniline. It does not seem to the court that he was engaged in such a process. His employer had a department in which the workmen were required to apply aniline dyes to raw furs. He did not work in that department. His work was to handle and brush dry furs after

the process of drying was complete. He handled furs which had been dyed, but did not handle or apply the dyes. The court thinks that "any process involving the use" of aniline, as employed in the law, is descriptive of a chemical process, and, in the fur-dyeing trade involves the application of the chemical to the furs. The claimant, not having been engaged in making application of the dyes, was not within the coverage of the law, and was not suffering from an occupational disease. His claim should be dismissed.

Injury to Boy from Signal Apparatus in Hospital

(Hindal v. Kahler Corporation (Minn.), 208 N. W. R. 524)

The Supreme Court of Minnesota, in affirming an order denying the defendant's motion for judgment or for a new trial, after the plaintiff had recovered a verdict for $1,000, says that this action was by a father, on behalf of his minor son, to recover for personal injuries (electric burns), alleged to have been sustained by the boy while in the defendant's hospital as a patient. The boy, almost 15 years of age, got to maneuvering with the electric light cord and button that hung at the head of his bed for use by patients in calling attendants. The plaintiff contended that the defendant was negligent with regard to maintaining the push button in a safe condition, in that it allowed the screw in the shield to become loose so that it dropped out and allowed the shield to get out of place, and in allowing this young boy to occupy the room with the button in such condition. The boy testified, in effect, that the screw was gone; that the shield slipped from the button a distance of a foot or more; that he was playing with the button and cord; that he pushed the shield back and forth on the cord, and then placed the button in his mouth so that the connection at the base came into contact with the inner side of his lower lip, resulting in the burn and injury complained of. Under the evidence in this case, both the negligence of the defendant and the contributory negligence of the boy were for the jury. A minor of the age of 15 years must be expected to exercise some degree of care, but the measure of it depends on his capacity and intelligence. This boy testified, in effect, that he was unfamiliar with electricity, and that he did not know there was any danger in handling the button. Conduct that will constitute contributory negligence on the part of an adult may be proper on the part of a minor. That which may be negligence on the part of one minor may be proper care on the part of another, depending on the age, discretion, intelligence, experience, etc., of the minor. The capacity cannot be safely measured in such matter by the difference of a year or two in the age of the minor. The degree of care required of persons having possession and control of dangerous instrumentalities, such as electric wires, is of the highest. The care must be commensurate with the nature, character, manner and use of the instrumentality, and is more exacting as respects young children. The caution and care required of others toward children are measured by the age, the maturity and the intelligence of the child.

No Allowance for Alcohol Rubs for Temporary Comfort

(Quinn v. Poli et al. (Conn.), 133 Atl. R. 98)

The Supreme Court of Errors of Connecticut says that it was disclosed that the plaintiff, while employed by the defendant, was injured by a fall that fractured her left hip and totally incapacitated her. She was given proper medical, surgical and hospital care in accord with the terms of the workmen's compensation act, a voluntary agreement was made, and compensation was being paid her each week for total disability. The sole question was whether the compensation commissioner had properly awarded her an allowance of $5 a week for an indefinite time for treatment of her hip by alcohol rubbing. Under the finding it appeared that all the curative assistance that could be given the plaintiff by medical, surgical or hospital care had been given by the defendant. Her condition could not be improved by further medical, surgical or hospital care. The alcohol rubs were not administered as a curative remedy, but merely as a means of temporary comfort; that is, as a temporary palliative. The court holds that the award for alcohol rubs should be vacated.

Damages for Unlawful Confinement as Insane

(Hough v. Ogden et al. (N. J.), 133 Atl. R. 73)

The Supreme Court of New Jersey briefly says that this action was brought against the defendants and two others charging a conspiracy to have the plaintiff confined in the state hospital for the insane at Morris Plains. The defendants were the physicians who signed the certificate, which was the basis of the suit under public laws of 1918, pp. 343, 372, sections 404, 405. The plaintiff was taken from the Bergen County jail, May 14, 1921, to the hospital, and released and discharged by order of a judge of the court of common pleas of the county, July 14, as not insane. There had been a previous hearing before a vice chancellor, June 7. Although no adjudication as to the plaintiff's sanity was made, she was released in the custody of her father. She was thus confined twenty-one days. The trial of this case resulted in a verdict for the plaintiff for $5,000 compensatory damages. The verdict was not against the weight of the evidence. There was ample evidence that these defendants failed in the performance of an important and serious duty under the act. But, as the jury found by its verdict that there was no malice, this court thinks that a reading of the entire case showed that a verdict of $5,000 was excessive and it should be reduced to $3,000, and holds that it might stand for the latter amount, if the plaintiff would remit the excess.

Sued Parents for Fees—Evidence of Qualifications

(Morfit v. Thompson et ux. (Mo.), 282 S. W. R. 113)

The St. Louis (Mo.) Court of Appeals says that this was an action by a surgeon against the father and mother of two girls, one of the girls being 13 and the other one about 21 years of age, for professional services rendered to the girls. The plaintiff's evidence disclosed that he was called by the father for consultation with the family physician, with reference to the younger daughter's condition, who was then rushed to a hospital, where the plaintiff operated on her, finding the appendix gangrenous and broken, the several organs of the body involved, and peritonitis set in, all of which conditions were corrected. In addition to the consultation with the family physician and the operation, the plaintiff made twenty-nine hospital visits, nine house visits, and had the girl at his office five times for the use of roentgen rays. In his petition it was alleged that the fair and reasonable value of his services was $3,020. He obtained a verdict against the father alone for $1,500, with interest, totaling $1,615.25, judgment for which is affirmed, although the court thinks that there was ample evidence that the fair and reasonable value of the plaintiff's services in this case was in excess of the verdict of $1,615.25.

When the younger daughter was operated on, the mother and the older daughter were out of the city, and after their return the mother informed the plaintiff that such older daughter had been diagnosed as having appendicitis, and arranged with him to come to their home and examine her. An operation was advised and both father and mother "agreed to an operation," which was performed at the hospital. It was an appendectomy, and successful. In this case the plaintiff made nineteen hospital visits and seven home visits. The evidence disclosed that the fair and reasonable value of his services was $1,060. The jury rendered a verdict against both defendants in the sum of $1,000, with interest, aggregating $1,076.83, which is affirmed as against the father, and reversed as to the mother.

The father testified that he, and he alone, made the contract of employment of the plaintiff to treat both daughters, and that it was agreed that the amount should be "reasonable and satisfactory." The mother denied that she either employed or authorized the employment of the plaintiff for the services rendered either of the daughters. Nothing besides what the plaintiff testified to, as above, was adduced to show that the mother by word or deed intended to make herself liable for the fees of the older daughter (who, being over 18 years of age at the time, was, under the law as it then stood, an adult), or to show that the plaintiff intended to

hold the mother in such account, or was led to understand that she was to be so regarded. All the evidence was the other way. That being so, the trial court improperly allowed the case to go to the jury as against the mother on the count on the charge for services rendered in the case of the older daughter, and the demurrer of the mother should have been sustained.

On cross-examination, the mother more than once testified that she did not employ the plaintiff to operate on the older daughter, nor in any wise direct him to perform the operation. She said that, as a matter of course, she talked to the plaintiff about the daughter's illness, and that she consented to an operation. Then she was asked whether she intentionally placed herself in a position where her words or conduct could not be counted against her on the question of her liability, and she answered: "Not at all." That did not lend any weight whatever to the plaintiff's case that there was an implied contract on her part to pay for this service.

It was contended that the trial court erred in admitting evidence, over the defendants' objection with reference to the plaintiff's training and experience, and especially with reference to his former services in the medical corps of the army. The defendants conceded that the plaintiff was a surgeon of standing and ability, and argued that for that reason his qualifications were not in dispute, and that evidence of such nature was therefore immaterial and prejudicial. This court, however, thinks that this evidence was admissible. It has been expressly held that, in an action by a physician or surgeon for professional services rendered by him, it is competent for him to show that he possessed learning and skill, and that such evidence should be considered by the jury in estimating the value of the services rendered (*Morrell* v *Lawrence*, 203 Mo. 363, 101 S. W. 571).

It was asserted that where a surgeon's charges are unreasonable and excessive the court may take judicial notice of such fact. But courts take judicial notice only of such facts as are commonly known to all persons of ordinary intelligence. The fair and reasonable value of the plaintiff's services was in this case for determination. This was peculiarly a question for the jury on the evidence adduced, all of which tended to support the amount of the plaintiff's claim.

Employer Having Sick Employee Taken Home—Headache

(Tullgren v. Amoskeag Mfg. Co. (N. H.), 133 Atl. R. 4)

The Supreme Court of New Hampshire had here two actions for negligence, one brought by the plaintiff as administrator, and the other by him personally, to recover damages for the death of his wife, who became so sick while at work in the defendant's factory that the foreman had her sent home in an automobile kept and used by the defendant. The driver left her about 700 feet from her home, on account of water that was on the road, and she walked the rest of the way, dying soon after she reached home. In sustaining an exception to the granting of a motion for a directed verdict for the defendant in the action brought by the plaintiff as administrator and in overruling such an exception in the other case, the court says that it was the defendant's custom to carry home employees taken sick while at work, but no claim was understood to be made that the custom showed any agreement for its observance so as to make it a term of the contract of employment the validity of which made it a duty of the defendant to render the service. Without such duty it could in no event be maintained that the employee so served and the driver of the employer's conveyance were fellow servants. One too sick to work cannot be said to be on duty, and, when thus affected, one is outside the scope of employment.

The duty to use care in rendering a service arises, not from a right to receive the service, but from the relation between the parties which the service makes. The relation being established, the legal incidents pertaining to it follow. The right to receive care being premised, it is not ordinarily lost by delegation to others of the performance of the service, and the relation between the parties is unaffected by the assignment of the undertaking to one's servant. Under the rule of respondeat superior (let the master answer), the defendant was no less liable because it had a servant take its place in carrying out its undertaking. Even if it were assumed that the parties did not contemplate that the defendant should be liable for the driver's negligence, it would not affect the law making it so. Nor was argument for abridgment of liability supported on grounds of policy and expediency. If the water made an apparent barrier to travel by automobile, the duty to use care in getting the woman to some suitable place was not thereby released. The driver had a sick woman on his hands, and the defendant's undertaking remained unfinished. The undertaking was to give her reasonable attention and assistance to enable her to reach her home in safety. It was for the jury to say whether the woman discharged further prosecution of the undertaking when the travel by automobile ended, and, if not, whether care was then exercised.

Cases holding an employer not responsible for the negligence of a physician furnished by him, if due care in engaging a competent physician is used, are readily to be distinguished, as a physician is not the employer's agent or servant. He is not under direction or control in the manner he does his work, but is his own master. Conversely, the physician, unless he should know of them, is not liable for faults in the equipment and facilities furnished by the employer.

Certain hypothetic questions were asked of medical experts, who testified in answer that in their opinion the woman died of heart trouble caused by overexertion. There being evidence of the defendant's negligence as the cause of the overexertion and of the overexertion as the cause of death, and no other cause of her death being conceded or conclusively proved, it was for the jury to pass on it.

On motion for rehearing the defendant urged that in leaving the woman to go home unaided it had no notice, or reason to anticipate, that harm would be done. It claimed that its only notice was of a sick headache, which indicated no need of aid. However, if judicial notice may not be taken of the fact that a sick headache is not an original source of trouble, but derivative of other trouble, it may at least be found that it would inform ordinary men as a symptom of some trouble which might be so serious as to make walking unaided unsafe. On the way the woman was so sick as to require the driver to stop in order to obtain relief. There was accordingly notice of an abnormal condition. The defendant's ignorance of the nature of her trouble was some notice that it might be serious, and that leaving her to go home unaided might result in injury. Whether, in the discharge of the undertaking to take the woman home, ordinary men would have seen that she was aided in completing her journey under the circumstances, was an inquiry of fact which the evidence was sufficient to determine affirmatively. If there was likelihood of injury, the duty to use care was not discharged merely because there was a greater unlikelihood of it.

Physician's Examination and Testimony in Rape Case

(Commonwealth v. Colangelo (Mass.), 152 N. E. R. 241)

The Supreme Judicial Court of Massachusetts, in overruling the exceptions of the defendant, who was convicted of carnally knowing and abusing a female under 16 years of age, says that the testimony of physicians was rightly admitted. Whether an examination made in April, 1925, was too remote from the time of the alleged assault, about Thanksgiving in 1924, was for the trial judge to decide. This court cannot say that he was wrong in admitting the evidence. The statement that the intercourse had taken place around Thanksgiving was not admissible as proof of the fact, and could not be introduced to establish the fact in the form of testimony by a physician to what a patient or subject for examination had told him. Nor was it admissible as a fresh complaint. The judge instructed the jury when it was admitted that the girl's statement to the physician in regard to what happened to her was not evidence as to whether the defendant did anything to her or not. The statements were admissible as a basis for the physician's opinion on the condition of her body. This court cannot assume that the jury disregarded the judge's instruction.

Society Proceedings

COMING MEETINGS

District of Columbia, Medical Society of, Washington, D. C., Dec. 1. Dr. C. B. Conklin, 1718 M Street, N. W., Washington, D. C., Sec'y.
Isthmian Canal Zone, Medical Association of, Ancon, Dec. 21. Dr. Lawrence Getz, Hospital Santo Tomas, Panama City, Panama Canal Zone, Secretary.
Philippine Islands Medical Association, Manila, Dec. 14-17. Dr. I. Concepcion, College of Medicine and Surgery, Manila, P. I., Secretary.
Radiological Society of North America, Milwaukee, Nov. 29-Dec. 4. Dr. Robert J. May, 5005 Euclid Avenue, Cleveland, Secretary.
Society of American Bacteriologists, Philadelphia, Dec. 28-30. Dr. James M. Sherman, Cornell University, Ithaca, New York, Secretary.
Southern Surgical Association, Biloxi, Miss., Dec. 14-16. Dr. R. L. Payne, Medical Arts Building, Norfolk, Va., Secretary.

WESTERN SURGICAL ASSOCIATION

Thirty-Sixth Annual Meeting, held at Duluth, Minn., Oct. 12-14, 1926

The President, DR. ROBERT C. COFFEY, Portland, Oregon, in the Chair

Duodenal Diverticulitis

DR. NEIL JOHN MACLEAN, Winnipeg, Manit.: Further experience shows that duodenal diverticulitis, though rare, occurs more frequently than was at first supposed. There are no characteristic symptoms from which a diagnosis can be made clinically. No technic for the removal of a diverticulum embedded in the head of the pancreas or in the retroperitoneal space is described in textbooks on operative surgery. Since 1922, J. C. B. Grant, professor of anatomy in the medical department of the University of Manitoba, has injected with paraffin the duodenums of all cadavers brought to the dissecting room. With surprising regularity he found diverticula present in two out of every twelve specimens examined. In three years, thirty-seven bodies were examined, and in six of these diverticula of the duodenum were present, an average of 16.2 per cent. Baldwin, in a series of 105 necropsies, found fourteen, or 13.3 per cent. It would appear from the foregoing statistics that in the routine roentgenologic examination of the gastro-intestinal tract a large percentage of diverticula are not visualized or are missed by the roentgenologist. My experience has been limited to sixteen cases. The presence of a diverticulum was demonstrated with the roentgen ray; in no case was the diagnosis made clinically. There were four cases of diverticulosis, the symptoms being entirely accounted for by other abdominal lesions. Eight manifested symptoms presumably due to diverticulitis (i. e., no other cause for their symptoms could be found), but not sufficiently severe to justify surgery. Four patients had extremely severe symptoms and were operated on. Three patients were entirely relieved of the symptoms. The last operation was done too recently to be able to report on the end-result, though the patient is making a favorable convalescence.

Excision of Ulcer of the Duodenum

DR. E. STARR JUDD, Rochester, Minn.: The ideal operation for any condition is one that removes the lesions causing the trouble with the minimum of disturbance and leaves the least possible chance of recurrence. Apparently the only method of destroying sphincter activity at the pylorus is to remove all or part of the muscle. Removal of all the muscle necessitates complete pylorectomy. This seems a more formidable operation than is warranted in cases of simple duodenal ulcer and, moreover, it may be followed by scar and contracture interfering with the lumen. A much more conservative and simple operation is the excision of the anterior half of the pyloric sphincter together with the cap of the duodenum and the ulcer. When this portion of the duodenum has been removed and the anterior part of the sphincter excised, the two openings, one at the lower end of the stomach and the other at the upper end of the duodenum, stand out just as the two openings of a gastro-enterostomy after the posterior row of sutures has been put in. The technical steps of the operation are not difficult so long as the tissues are well exposed; and exposure is readily carried out if the operation is not attempted in cases in which the ulcer is some distance down the duodenum or in which the duodenum is too firmly fixed to be readily mobilized. We have not felt justified in performing the operation in all cases of duodenal ulcer, but have confined it to those cases in which it could be performed without great risk. If hemorrhage is a predominant symptom, excision is indicated. As a result of several years' experience with excision and partial duodenectomy, we believe that when it can be carried out satisfactorily it has distinct advantages over gastro-enterostomy.

Diverticulitis of the Sigmoid

DR. W. D. HAINES, Cincinnati: In 1925 only one patient was admitted to the Cincinnati General Hospital suffering from diverticulitis with perforation. In the ten year period from 1915 to 1925, two patients died of some other disease, but diverticula of the sigmoid were found at the necropsy. The admissions to this institution number 10,000 annually; approximately 20 per cent are referred to the surgical service. Twenty carcinomas of the sigmoid were recorded during the same period. At another hospital one patient with diverticulitis and perforation and one with diverticulitis and adhesions were admitted in the past five years. Frequent consideration of pathologic lesions which are infrequently encountered, with free interchange of ideas, tends to create alertness in the recognition of such conditions and prevention of errors in the diagnosis and treatment.

Postoperative Pulmonary Embolism

DR. KELLOGG SPEED, Chicago: In the records of the Presbyterian Hospital I have found thirty instances of postoperative pulmonary embolism—seventeen men and thirteen women—in the last fourteen years. Probably there have been many more, certainly many more without fatal termination. All emboli following either simple or complicated labor cases have been omitted. The operations have varied and not all have been in the lower abdominal cavity. The average age of the men patients was 53.3 years, while that of the women was 44.1 years. The number of deaths was twenty-three, a mortality of 77 per cent. The operative wound was infected in twelve cases. Postoperative fever, usually starting immediately after the operation, was present in all but five cases. Leukocytosis (more than 7,000 cells per cubic millimeter) was present in all but four instances. The average time elapsing between operation and onset of symptoms in the twenty-three fatal cases was about seven days, the longest being twenty-five days, the shortest one day, of which latter interval there were four instances. Thrombosis was noticed in seven cases, occurring in the leg six times and the thigh once. In one nonfatal case of pyelotomy it involved both legs. The symptoms of embolism first noticed were usually sharp pain in the chest, frequently referred to the midline and substernal or epigastric. In some instances the pains were lateral, as pleuritic pain. Cough, a rise in temperature and beginning chest findings followed in the average case, which survived a few days. Only eleven patients gave positive chest signs, which is explained partly by the fact that many of the emboli were massive and death followed within a few minutes, not permitting chest examination. In other cases no chest examination was made and recorded.

Rhabdomyosarcoma of the Vulvar Orifice in Children

DR. CHARLES D. LOCKWOOD, Pasadena, Calif.: A girl baby, aged 16 months, began to pass polypoid masses the size and shape of muscat grapes. These tumors increased in number and were frequently accompanied by blood. The child was taken to the family physician, who found a large mass of polypi, very like nasal polypi, springing from the posterior vaginal wall. These were removed but soon recurred. The child suffered severe hemorrhage, causing profound anemia. I saw her first in February, 1925. She was well nourished. The complexion was pasty, the teeth poor. The throat, chest, heart, lungs and abdomen were normal. A pedunculated tumor mass the size of a small orange protruded from the vagina. It bled easily when irritated. It seemed to be attached by a rather broad base to the posterior raphe of the

vagina. Over its upper surface many polypoid tumors resembling a cluster of grapes were found. There was a seropurulent, foul smelling discharge. The tumor was thoroughly removed down to the posterior raphe with the actual cautery. Treatment with 400 mg. hours of radium screened by 2 mm. of lead and 1 mm. of brass was given. The child rapidly regained her health and normal weight. Grossly, the pathologic diagnosis was multiple polypi springing from a large mass which grossly was a fibromyoma. Histologic diagnosis was endothelioma or spindle cell sarcoma. The child remained well until Nov. 11, 1925—more than nine months—when she again passed two or three small polypi. These were removed and an additional 300 mg. hours of radium was given. In about two weeks she began to fail. There was no return of the tumor at the original site, but the abdomen began to fill up and the patient gradually became emaciated. Jan. 27, 1926, the abdomen had become enormously distended; coursing over it were many accessory, distended veins. The lower part of the abdomen was flat on percussion, and ballottement was present; the upper part was tympanitic. The abdomen was tapped at this time with a large trocar and 100 cc. of bloody fluid evacuated. February 7, one year after my first examination, the baby died of toxemia and exhaustion. Microscopically, the sections showed a soft, edematous tumor, having the appearance of a myxoma. Scattered throughout the tumor, and especially around the blood vessels, there were numerous spindle shaped cells, which made up a considerable part of the tumor. In places these spindle cells were gathered together, forming wide strands. The spindle cells closely resembled muscle fibers, which showed a great many transitional forms. In some of the sections stained with phosphotungstic acid-hematoxylin, a few cells with delicate cross striation could be made out. Longitudinal striation could easily be seen in a number of cells. The tumor was quite vascular. Rarely a large cell with a mitotic nucleus was seen. The diagnosis was rhabdomyoma (sarcoma botryoides, Pfannenstiel).

Acute Primary Intussusception

Dr. Roland Hill, St. Louis: My experience with this disease leads me to believe that: 1. A very large percentage of these cases are overlooked and the diagnosis is never made. 2. The mortality varies inversely as to the length of time after the onset of symptoms before one resorts to surgical measures. 3. The use of opium after an operation of this kind is a very grave error. 4. The high temperatures following these operations are best combated by the use of high cooling enemas of water; for this purpose we use physiologic sodium chloride solution at from 80 to 85 F. and expect to get a reduction of from 1.5 to 3 degrees of temperature. 5. In cases in which resection is necessary, we believe that it is better to leave the ends open after the method of Mikulicz than to attempt to do the primary resection. In late cases I believe that a modification of the Mikulicz operation will prove of great value.

Modified Rammstedt Operation

Dr. Frederick G. Dyas, Chicago: In my series, two postmortem examinations showed that death was caused by hemorrhage from the pyloric incision. A study of these cases and a series of adult stomachs showed that the blood supply is much richer on the anterior surface of the pylorus than on its upper and posterior aspect. It was therefore believed that if the incision could be made on the upper and posterior surface, little or no hemorrhage would result. This was done in the last two cases with the result that almost no bleeding occurred. The upper posterior surface of the pylorus may easily be exposed by rotating the pylorus through an arc of 90 degrees from above downward. No separation of the attachments of the pylorus is necessary to carry out this procedure. This slight modification of Rammstedt's technic has the further advantage of the protection afforded the denuded area of the pylorus when it is returned to its normal position. The single layer of mucosa which remains after the hypertrophic fibers of the pylorus have been incised, and which frequently bulges through the incision, is reinforced by the tissues of the posterior abdominal wall. Any adhesions that result will only strengthen the denuded area. Perigastric adhesions occurring anywhere but on the posterior surface of the pylorus frequently result in disabling conditions. The experimental work was done on dead babies with the assistance of Dr. Emmel of the department of anatomy of the University of Illinois. The aorta and vena cava were injected with lead to demonstrate graphically the rich plexus of vessels on the anterior surface of the pylorus and their comparative scarcity on the posterior surface. Roentgen-ray exposures were made to demonstrate the finer vessels.

Congenital Hypertrophic Pyloric Stenosis

Dr. Arthur C. Strachauer, Minneapolis: This lesion has been observed in a seven months fetus and on a number of occasions in the stillborn, and would therefore seem to be developmental, thus justifying the term "congenital." In a few instances the condition has been observed in twins. These cases are never so emergent as to require immediate operation. In my series of forty-eight cases two gastroenterostomies and forty-six Rammstedt operations were performed, with the loss of one infant. The duodenal mucosa at the sulcus was accidentally opened in two cases, as made evident by the presence of small bile-stained bubbles. A single stitch in each instance closed the opening and the accident in no way effected the convalescence of the patient. Forty-six of these patients were males. The shortest time from skin incision to skin closure was ten minutes, and the second half of the series averaged from twelve to fourteen minutes. The following factors are essential in achieving the highest degree of success: The operating room should be warm and free from drafts. In this series the operating room temperature has been maintained at 80 F. and higher. Most of these emaciated infants weighed less than at birth, the body weight being as low as 4½ pounds (2 Kg.). The child's extremities and body, with the exception of the operative field, are bandaged in cotton batting and surrounded by hot water bottles. A trained surgical team is indispensable to smooth and rapid work. Ether, administered by a skilful anesthetist familiar with the requirements of pediatric surgery, has been the anesthetic of choice and has been employed except in two cases which were done under local anesthesia. Under local anesthesia the straining of the infant forces loops of bowel through the wound, thus producing the shock factors and time loss referred to above. The members of the surgical team are scrubbed before the anesthetic is commenced, and the first minute in which surgical anesthesia and complete relaxation are obtained the operation is started. Operations performed under general anesthesia are too frequently begun before the patient is properly relaxed. All abdominal packs and sponges are wrung out of physiologic sodium chloride solution, maintained at 110 F., thus avoiding the shock produced by either too hot or too cold temperatures and likewise preventing injury to the peritoneum which results in the formation of adhesions. On completion of the operation, the child is wrapped in warm blankets and returned to its crib, which has been warmed with hot water bottles, the temperature of the water being 110 F., as ascertained by thermometer reading. Feedings are begun in from three to four hours after the operation. No transfusions were done in this series of cases.

Results of Operation for Cancer of the Breast

Dr. William T. Coughlin, St. Louis: There have been fifty operations, and ten of them have been done only two years or less. Among the fifty there were five deaths in hospital after operation: shock, two; heat stroke, one; gas gangrene, one, and pneumonia, one, an operative mortality of 12 per cent. Of the forty patients operated on more than two years ago, twenty-four are now living. Of the sixteen dead, one died of gas gangrene, one of pneumonia and one of shock; one died three years later of lobar pneumonia. All the rest of the twelve patients are known or believed to have died of cancer. Of the twenty-four who survived, one is living after thirteen years, two after eleven years, one after ten years, three after seven years, one after six, four after five years, eight after four years, and four after three years.

(To be continued)

Current Medical Literature

AMERICAN

The Association library lends periodicals to Fellows of the Association and to individual subscribers to THE JOURNAL in America for a period of three days. No foreign journals are available prior to 1921, nor domestic prior to 1923. Periodicals published by the American Medical Association are not available for lending, but may be supplied on order. Requests should be accompanied by stamps to cover postage (6 cents if one and 12 cents if two periodicals are requested).

Titles marked with an asterisk (*) are abstracted below.

American Journal of Obst. and Gynec., St. Louis

12: 303-458 (Sept.) 1926

*Association of Congenital Diverticula of Fallopian Tube with Tubal Pregnancy. F. P. McNalley, St. Louis.—p. 303.
Pregnancy in Uterus Didelphys. P. Findley, Omaha.—p. 318.
Lipiodol as Adjunct to Tubal Inflation in Diagnosis of Sterility. L. M. Randall, Rochester, Minn.—p. 326.
Early Ovarian Pregnancy Associated with Uterine Pregnancy. H. N. Vineberg, New York.—p. 332.
*Plasma Protein Fractions in Normal Pregnancy, Labor and Puerperium. E. D. Plass and C. W. Matthew, Detroit.—p. 346.
Differential Diagnosis Between Diabetic and Nondiabetic Glycosurias in Pregnancy. O. H. Stansfield, Worcester, Mass.—p. 358.
Injury of Cervix Uteri and Its Intermediate Repair. N. H. Williams, Los Angeles.—p. 364.
*So-Called Eclampsia Without Convulsions Successfully Treated with Insulin. W. Thalhimer, Milwaukee.—p. 369.
*Endocervicitis. L. L. Fulkerson, New York.—p. 374.
*Semen Injections. S. S. Rosenfeld, New York.—p. 385.
Manual Reposition of Anteverting Retroverted Uteri. L. Drosin, New York.—p. 388.
*Contour Abdominal Measurement of Pregnancy. G. F. Pendleton, Kansas City, Mo.—p. 390.

Diverticula of Fallopian Tube and Tubal Pregnancy.—Of twelve cases of tubal pregnancy analyzed by McNalley, diverticula were demonstrated in ten, or 83.3 per cent. In three of the ten cases the malformation was directly responsible for the arrest of the ovum.

Plasma Protein in Pregnancy, Labor and Puerperium.—Plass and Matthew have analyzed 314 plasmas of normal nonpregnant, pregnant, parturient and puerperal women. The total plasma proteins tend to be diminished during pregnancy and the early part of the puerperium. The serum albumin is diminished to such an extent that the fall of total proteins can be attributed to the reduction in concentration of this fraction. The relative decrease is slight. The serum globulin undergoes a slight relative increase, although the absolute values remain practically constant. The fibrin (fibrinogen) rises during pregnancy, to reach a high point shortly after delivery.

Insulin in Eclampsia Without Convulsions.—Thalhimer feels that the course of the patient's recovery would seem to indicate that the relief of acidosis and the control of the abnormal carbohydrate metabolism with insulin contributed essentially to her recovery. The ketosis was eliminated in twelve hours after energetic insulin therapy was started.

Endocervicitis.—Fulkerson analyzed 1,039 cases of endocervicitis. This condition was present in 33.16 per cent, or about one third, of gynecologic patients. The traumatism of labor or abortion appears to be the chief etiologic factor, since 80.1 per cent of the patients had borne children or had aborted. The married state in itself appears to be a factor; of the 92.3 per cent of patients who were married there were 12.2 per cent who had never been pregnant, as compared to 7.7 per cent of single women. A small number, 12.2 per cent, of cases of inflammation of the cervix may be cured by the application of antiseptics and caustics. These were apparently the least diseased cervices. The use of the cautery should be accepted as the standardized method of treatment, since 65.3 per cent of patients so treated were cured and no dystocia in subsequent labors resulted. The cervix should seldom be operated on in the presence of inflammatory disease. Endocervicitis is a frequent cause of sterility, accounting for 10.4 per cent of sterile marriages in this study, or 21.3 per cent of sterility among the patients desiring children. No evidence was found that endocervicitis is a precancerous lesion.

Semen Injections.—Three women received repeated injections of human semen containing spermatozoa. Only two reactions, both local and neither serious, were encountered. A definite positive test for a spermatoxic body was not demonstrable. In the serum of the two injected female rabbits, a spermatoxic principle was not demonstrable. There was, however, clearly demonstrated a complement-binding body. The quantity of this substance was rather rapidly diminished. Rosenfeld suggests that it may be possible to regulate the injections so that a sufficient quantity of spermatoxic substance would always be present in the serum. Such a procedure would lighten the load of the women in whom pregnancy is contraindicated. Judging from the women studied in this series, it would require many semen injections to initiate the production of spermatoxin.

Contour Abdominal Measurement of Pregnancy.—Pendleton asserts that labor can be predicted in a reasonable number of instances by means of abdominal contour measurements, provided extreme care is used in eliminating the many possible factors which easily cause great error in results. Such a method is dependable and as accurate as Nagel's rule after the twenty-fourth week, and should be used in conjunction as an arbitrary check to that rule, or when the menstrual history has been peculiarly unusual.

Annals of Surgery, Philadelphia

84: 305-464 (Sept.) 1926

*Vitalistic Method in Treatment of Certain Surgical Infections. B. Schiassi, Modena, Italy.—p. 305.
Simple and Combined Ligations of Pulmonary Vessels. S. A. Smirnof, Tomsk, Siberia.—p. 317.
Lung Abscess. J. B. Flick, Philadelphia.—p. 323.
*Extraperitoneal Transdiaphragmatic Route for Lower Intrathoracic Surgery. M. Joannides, Chicago.—p. 337.
*Physiology of Biliary Tract. E. A. Graham, W. H. Cole, G. H. Copher and S. Kodama, St. Louis.—p. 343.
Surgical Aspects of Certain Phases of Liver Function. E. P. Richardson, Boston.—p. 352.
Gallbladder of 1926. C. H. Mayo, Rochester, Minn.—p. 358.
Problems in Gallbladder Surgery. E. R. McGuire, Buffalo.—p. 366.
*Dangers Incident to Cholecystectomy. H. W. Cave, New York.—p. 371.
Surgical Management of Complications of Cholecystitis. J. B. Deaver and V. G. Burden, Philadelphia.—p. 379.
*Association of Cholecystitis with Duodenal Ulcer. H. A. Bruce, Toronto.—p. 387.
Strictures and Operative Injuries of Bile Ducts. J. Douglas, New York.—p. 392.
*Stricture of Common Bile Duct. E. S. Judd, Rochester, Minn.—p. 404.
Operative Management of Common Duct Stones. G. W. Crile, Cleveland.—p. 411.
Hydrops of Gallbladder in Infant, Aged 16 Months. H. Milch, New York.—p. 415.
Mortality Following Operations on Biliary Tract, Pancreas and Liver. E. S. Judd and B. R. Parker, Rochester, Minn.—p. 419.
Progressive Gangrenous Infection of Skin and Subcutaneous Tissues, Following Operation for Acute Perforative Appendicitis. G. E. Brewer and F. L. Meleny, New York.—p. 438.

Vitalistic Treatment of Infections.—The method devised by Schiassi is founded, above all, on the production, by physical methods, of a convenient renewal of the blood corpuscles and serum in the region of the focus of infection, thus bringing into action those vital forces which have the power, not only of defense, but also of restoring the infected region; hence the name "vitalistic."

Thoracic Surgery: New Route of Approach.—Joannides describes a transdiaphragmatic extraperitoneal route for surgery of the lower intrathoracic organs, when one does not want to disturb the chest wall. The distinct advantage of this procedure is the maintenance of an intact chest wall; thus no embarrassment of respiration follows intrathoracic operations.

Physiology of Biliary Tract.—Graham and his associates assert that the hypothesis of Meltzer of the existence of a contrary innervation between the gallbladder and the so-called sphincter of Oddi has little evidence to support it. The opening and closing of the duodenal end of the common duct depends almost entirely on the tonus of the duodenum, and it is not necessary to assume a separate sphincter to control this mechanism. The spurting of bile through the ampulla of Vater is due largely to the milking action of duodenal peristaltic waves on the common duct, which passes obliquely through the duodenal wall. The emptying of the gallbladder is chiefly a passive phenomenon due to factors such as the elastic recoil of a distensible viscus, and the gradual washing

out of its contents by the ingress of fresh bile from the liver. Increased intra-abdominal pressure is also a factor of some importance. The gallbladder fails to contract when any of the experimental methods are tried which are known to induce violent contraction of either the urinary bladder or the intestine. Muscular contraction of its wall must therefore play an insignificant rôle in the emptying of the gallbladder. Those substances which are known to induce emptying of the gallbladder probably have this property by virtue of their ability to cause duodenal peristalsis. Oleic acid seems to be the most potent in this respect. Cholecystography is a test of the only functions known to be possessed by the gallbladder. If the organ has been shown to be functioning normally, it almost certainly is not causing symptoms, even if at operation old evidence of disease is found, such as adhesions and scarring.

Dangers Incident to Cholecystectomy.—Cave reports 470 cholecystectomies with thirty deaths. The immediate operative mortality was 6.3 per cent. Among 105 cholecystostomies there were five deaths, with an immediate operative mortality of approximately 5 per cent. He does not advocate cholecystectomy in the acutely inflamed gallbladder, preferring cholecystostomy.

Cholecystitis and Duodenal Ulcer.—In his last hundred operations for gallbladder disease, Bruce has encountered five cases in which duodenal ulcer was also present, although unsuspected either from the clinical or roentgen-ray examinations and one case in which the two conditions were recognized as coexisting prior to operation.

Stricture of Common Bile Duct.—According to Judd, obliterative cholangeitis resulting in stenosis of the common or hepatic duct is the cause of a considerable proportion of strictures of the common duct that have been classified as traumatic. These cases can often be recognized before the first operation. The symptoms are generally intermittent. Repeated operation is indicated if necessary. Stricture of the common duct in which a biliary fistula exists may be deceptive in that there may be unexpected biliary cirrhosis. Careful study and any indicated preparatory treatment should be followed out, in spite of the lack of jaundice. Complete jaundice and severe biliary cirrhosis accompany the severance of the duct when the proximal end is closed. It is necessary to spend a great deal of time in preparing the patient for operation. It is also necessary to give much attention to the postoperative care. Anastomosis of the stump of the common duct or the opening in the surface of the liver to an opening in the duodenum over a tube is the most satisfactory operation. In certain cases, recurrence of symptoms follows operation for stricture of the common duct. If these symptoms persist and increase, further operation is indicated, with some prospects of permanent relief.

Archives of Dermatology and Syphilology, Chicago

14: 371-502 (Oct.) 1926

Founding of American Dermatologic Association. G. H. Fox, New York.—p. 371.
*Alleged Stimulation of Autonomic Nervous System in Arsphenamine Reactions. P. J. Hanzlik and C. H. Thienes, San Francisco.—p. 382.
*Generalized Telangiectasia. S. W. Becker, Rochester, Minn.—p. 387.
Treatment of Syphilis According to Jacques de Bethencourt, 1527. B. B. Beeson, Chicago.—p. 427.
*Urobilinogen Determination in Treated Syphilitic Patients. H. Brown and S. S. Greenbaum, Philadelphia.—p. 434.
*Is Aphthous Stomatitis Due to Virus of Herpes Simplex? H. J. Templeton, Oakland, Calif.—p. 439.

Arsphenamine Reactions.—The statement that the basis of the "nitritoid crises," or reactions, accompanying the intravenous injection of the arsphenamines is due to some functional alteration or involvement of the autonomic nervous system is not sustained by the work of Hanzlik and Thienes. The basis probably consists of physicochemical changes in the blood and tissues.

Generalized Telangiectasia.—The literature is reviewed and seven cases of generalized telangiectasia are presented by Becker. A ready reference outline for intensive study is presented, and treatment and prognosis are discussed.

Urobilinogen Estimation During Antisyphilitic Treatment.—Results of a large number of urobilinogen determinations on the urines of patients undergoing antisyphilitic treatment are listed by Brown and Greenbaum, but are apparently too variable to serve as an index of hepatic injury in such patients.

Aphthous Stomatitis and Herpes Simplex.—Experimental results lead Templeton to believe that the clinical entity aphthous stomatitis is not caused by the virus of herpes simplex. Moreover, whatever the cause may be, it is evidently not any organism or virus which can be inoculated into the scarified cornea of a rabbit.

Archives of Neurology and Psychiatry, Chicago

16: 395-538 (Oct.) 1926

Language of Schizophrenia. W. A. White, Washington, D. C.—p. 395.
*Blood Sugar Curve in Mental Disease: II. Schizophrenic (Dementia Praecox) Groups. J. Kasanin, Boston.—p. 414.
*Roentgenologic Exploration of Central Nervous System with Lipiodol. J. A. Sicard, Paris, and J. Forestier, Aix-les-Bains, France.—p. 420.
*Sign of Spinal Cord Tumors. W. E. Dandy, Baltimore.—p. 435.
Satisfactory Method for Staining Nerve Fibers of Iris. M. Balado, Rochester, Minn.—p. 442.
*Multiple Primary Cerebral Neoplasms. I. J. Sands, New York.—p. 447.
Neuropathology: II. S. T. Orton, Iowa City.—p. 451.

Blood Sugar Curve in Schizophrenia.—Determinations of the blood sugar curve were made by Kasanin in forty schizophrenic cases. Of these, seven cases were discarded on account of the presence of somatic factors that might influence the curve. Blood sugar curves of 154 patients of similar types have been collected from the literature. The average curve of the patients recorded in both the literature and this series falls well within normal limits, although the percentage of abnormal sugar curves is much higher than in healthy subjects. In Kasanin's cases, no sugar curve characteristic of this group of conditions was found. These results fail to confirm the observations of those who report finding a characteristic curve in the group. Patients in a stupor usually respond with a high sustained sugar curve, although normal sugar curves, as well, may be found in stuporous patients.

Cerebrospinal Roentgenologic Exploration.—Sicard and Forestier state that for ventricular exploration the injection of lipiodol has not given such good results as the injection of air. The contrary is true for the spinal spaces.

Symptom of Spinal Cord Tumor.—In a case of tumor involving the spinal cord, reported by Dandy, signs and symptoms of spinal cord compression repeatedly and suddenly developed when the patient strained at stool. In another case, numbness and pain developed in both legs immediately after sneezing. These signs and symptoms are explained by a sudden increase of the intraspinal pressure above the tumor, and caused by straining at stool, coughing or sneezing. This increased pressure forces the spinal cord downward against the spinal tumor, causing trauma, of which the disturbed function—motor, sensory and sphincteric—is the result. For similar reasons, root pains, tract pains and backache—the three pains of spinal cord tumors—may follow sneezing, coughing and straining at stool. It seems probable that the sudden onset of any of these disturbances from straining may be a sign of importance in differentiating tumors from other lesions affecting the spinal cord.

Multiple Primary Cerebral Neoplasms.—A case is reported by Sands showing an endothelioma and an angioma in one frontal lobe producing at first severe nosebleed, followed by headaches, extending over a period of seven weeks, and finally by repeated convulsions and unconsciousness for eighteen hours, resulting in death.

Archives of Pathology and Laboratory Medicine, Chicago

2: 465-630 (Oct.) 1926

*Microscopic Changes of Certain Anemias Due to Radioactivity. H. S. Martland, Newark, N. J.—p. 465.
Syphilis of Lung: Case. G. J. Rukstinat, Chicago.—p. 473.
*Pathologic Changes in Voluntary Muscle: II. Experimental Study of Degeneration. W. D. Forbus, Baltimore.—p. 486.
*Blood Destruction in Mesenteric Lymph Glands of Guinea-Pigs. J. S. Lingenfelter, Detroit.—p. 500.
Mediastinal Carcinoma of Tracheal Origin: Case. A. H. Noehren and C. Kummer, Buffalo.—p. 508.
Source of Glycogen in Tubercles. M. Pinner, Chicago.—p. 513.

Source of Bilirubin. F. C. Mann, Rochester, Minn.—p. 516.
Electric Heating and Control Mechanism for Bacteriologic Incubators. C. B. Coulter, New York.—p. 528.
Stability of Kolmer's Antigen for Complement Fixation Tests in Syphilis. R. A. Kilduffe, Atlantic City, N. J.—p. 531.
Experimental Tar Cancer: Review. W. H. Woglom, New York.—p. 533. (To be cont'd.)

Anemia Due to Radioactivity.—Martland reports another case of storage of radioactivity in human tissues as an occupational poisoning. The case had been reported as a chronic leukopenic anemia of the pernicious type with necrosis of the jaw. The patient used luminous paints. The patient's expiratory air showed a measurable amount of radioactivity. She finally died, and the histologic and chemicophysical examinations confirmed and added additional support to opinions expressed in a previous report on this form of occupational poisoning. In addition, detailed examination was made of the tissues, especially as regards the type of anemia and the distribution in the body of the radioactive substances. The spleen and liver, also important storage organs of the reticulo-endothelial system, contained radioactive substances, but in very small amounts. The rest of the organs contained practically no radioactive substances. The gastro-intestinal tract, however, which was the portal of entry, still showed an almost negligible amount. The main storage of the radioactive substances was in the reticulo-endothelial system of the bone marrow sinusoids, and finally the bone cortex. Its close proximity to the erythroblastic and leukoblastic centers, the actual distance often being a matter of microns, exposed the blood-forming centers to a constant bombardment of not only beta and gamma rays, but also the short penetrating alpha rays, which form more than 80 per cent of the total radium energy and are a great deal more destructive in their action on the tissues. This constant irradiation may go on for years before the centers are finally exhausted. These studies throw considerable light on the type of anemias occurring among workers in radioactivity. They further emphasize the importance of the reticulo-endothelial system as a storage system for foreign particles of colloidal or near colloidal size. The independence of the reticulo-endothelial system from the adjacent hematopoietic system is also emphasized.

Experimental Degeneration of Voluntary Muscle.—Forbus succeeded in producing degeneration of striated muscle in vitally stained animals by intramuscular injection of powerful irritants, such as phenol (carbolic acid), 95 per cent alcohol and boiling water, or by cutting off the blood supply for a period of three hours. Regeneration of the muscle is effected by cells which develop from the nuclei and sacroplasm of the old preserved muscle fiber. The new fiber appears to arise either from a single muscle cell or from fusion of several such cells. Cartilage may develop in the scar resulting from injury to the muscle by the injection of 95 per cent alcohol.

Blood Destruction in Mesenteric Lymph Glands.—It has recently been shown that in pernicious anemia there is an excessive blood destruction brought about apparently by the phagocytosis of the patient's red blood cells by endothelial cells of his own bone marrow. Lingenfelter reports his observations made on the blood destructive action of reticulo-endothelial cells of the mesenteric lymph glands of guinea-pigs. He found that they normally function to a greater or lesser degree in the destruction of red blood cells. Foreign red blood cells injected into the peritoneal cavity of the guinea-pig are conducted in part into the lymph sinuses of the mesenteric lymph glands, where they are taken up by reticulo-endothelial cells, phagocytosis being preceded by adhesion of the red cells to the phagocytes.

Journal of Bacteriology, Baltimore

12: 179-242 (Sept.) 1926

Exudate from Nutrient Agar Slants—So-Called Water of Condensation. D. J. Healy, Lexington, Ky.—p. 179.
*Bacteriologic Study of Canned Salmon. C. R. Fellers, Seattle, Wash. —p. 181.
*Bacteriophagy in Urinary Infection. N. W. Larkum, New Haven, Conn. —p. 203.
Id.: II. Bacteriophagy in Bladder. N. W. Larkum, New Haven, Conn. —p. 225.

Bacteriologic Study of Canned Salmon.—In a five-year period 7,664 cans of salmon, comprising 540 separate lots, were bacteriologically examined by Fellers. Of the total cans, 4.6 per cent were found nonsterile, and 1.1 per cent were rejected for bacteriologic reasons. In 5,276 cans of sound, normal salmon, 3.4 per cent were nonsterile with 0.9 per cent rejected, while in 2,398 cans of doubtful quality salmon 7.1 per cent were nonsterile with 1.6 per cent rejected on bacteriologic grounds. Out of 220 nonsterile cans of salmon from seventy-seven lots, the following number of cans were found to contain certain bacterial groups: sporulating aerobes, 178; cocci, 16; nonsporulating rods, 16; obligate anaerobes, 5; true thermophils, 6; molds, 1. Of the sporulating aerobes, *Bacillus mesentericus* Flugge was most frequently encountered with seventy-three isolations, while *Bacillus vulgatus* Flugge, *B. subtilis* Cohn and *B. cereus* Frankland followed with forty-nine, thirty-one and nineteen, respectively. Eight other species occurring in lesser numbers were also identified. Seventeen micrococci, eight sarcinae and one streptococcus were isolated, the most common cocci being *Micrococcus varians* (Dyar) Conn and *Sarcina lutea* Schröter. *Streptococcus pyogenes* Rosenbach was isolated once. Inoculation experiments show that many sporulating aerobes grow well in canned salmon, but are not able to cause gas production or marked spoilage. A softening of the texture of the flesh, an abnormal odor and sometimes discoloration results. *Clostridium botulinum* grew vigorously in canned salmon even at low temperatures with profuse gas formation, putrefaction and liquefaction of the salmon. It has never been found in commercially canned salmon, and no outbreaks of botulism have been attributed to this food. The *Salmonella* group was absent, and, judging from the characteristics of this group and the lack of evidence implicating canned salmon, it is believed that food poisoning from this source is very rare.

Bacteriophagy in Urinary Infection.—Routine studies of urines made by Larkum from patients having urinary infections revealed the fact that bacteriophage was present in about 25 per cent of the urines, while *Bacillus coli* susceptible to the action of bacteriophage was present in the same proportion of the specimens. When individual cases rather than urines were considered, it was found that more than 36 per cent of the cases studied showed bacteriophage in one or more of the specimens of urine examined, while more than 40 per cent (not necessarily including the foregoing 36 per cent), were infected with a colon bacillus susceptible of being dissolved by a race of bacteriophage. Almost without exception, the chronic cases provided urines in which only resistant bacteria were found, while the acute were seldom due to this type of colon bacillus. Bacteriophage, too, was found exclusively in the urines from persons having acute infections. Four patients subjected to treatment with the bacteriophage showed definite improvement after the treatment.

Journal of Experimental Medicine, Baltimore

44: 285-438 (Sept. 1) 1926

Fundamental Properties of Fibroblast and Macrophage: II. A. Carrel and A. H. Ebeling, New York.—p. 285.
Cultivation of Herpetomonads from Insects and Plants. H. Noguchi and E. B. Tilden, New York.—p. 307.
Differentiation of Herpetomonads and Leishmanias. H. Noguchi, New York.—p. 327.
Prevention of Pigment Formation in Hair Follicles of Colored Mice with High Voltage Roentgen Ray. R. T. Hance and J. B. Murphy, New York.—p. 339.
Biology of Bacterium Lepisepticum: III. L. T. Webster and C. G. Burn, New York.—p. 343.
Id.: IV. Virulence. L. T. Webster and C. G. Burn, New York.—p. 359.
Action on Fibroblasts of Protein Fraction of Embryonic Tissue Extract. L. E. Baker and A. Carrel, New York.—p. 387.
Effect of Amino-Acids and Dialyzable Constituents of Embryonic Tissue Juice on Growth of Fibroblasts. L. E. Baker and A. Carrel, New York.—p. 397.
Trypanosome Infection: II. Relation of Physical Environment to Host Susceptibility to Infection. I. J. Kligler and I. Weitzman, Haifa, Palestine.—p. 409.
*Viscosity of Blood of Dog After Obstruction of Upper Gastro-Intestinal Tract. R. L. Haden and T. G. Orr, Kansas City, Kan.—p. 419.
Surface Tension of Blood Serum of Dog After Upper Gastro-Intestinal Tract Obstruction. R. L. Haden and T. G. Orr, Kansas City, Kan. —p. 425.
*Sedimentation Rate of Erythrocytes in Experimental Obstruction of Gastro-Intestinal Tract. R. L. Haden and T. G. Orr, Kansas City, Kan.—p. 429.
*Chloride Content of Tissues of Dog After Experimental Gastro-Intestinal Tract Obstruction. R. L. Haden and T. G. Orr, Kansas City, Kan. —p. 435.

Blood Viscosity After Upper Gastro-Intestinal Tract Obstruction.—Estimations of the viscosity of the whole blood and plasma of the dog after experimental upper gastro-intestinal tract obstruction are reported by Haden and Orr. With cardiac obstruction there is a rapid and marked rise in the viscosity of the whole blood and some increase in the viscosity of the plasma. The changes after pyloric obstruction are similar to those observed after cardiac obstruction. After obstruction of the upper jejunum, only slight changes are observed. The increase in viscosity parallels quite closely the degree of the toxemia. It is unaccompanied by any marked concentration of the blood.

Sedimentation Rate of Erythrocytes After Upper Gastro-Intestinal Tract Obstruction.—The results of the study of the suspension stability of the blood after upper gastro-intestinal tract obstruction are reported by Haden and Orr. After obstruction of the cardiac end of the stomach, of the pylorus and of the jejunum, the red cells separate from the plasma much more rapidly than normal. The variation in sedimentation time is due to a variation in the physicochemical status of the blood.

Chloride Content of Blood with Upper Gastro-Intestinal Tract Obstruction.—Comparative observations are reported by Haden and Orr on the chloride content of the blood, liver and muscle of the dog after obstruction of the upper gastro-intestinal tract. After obstruction of the pylorus, there is a marked fall in the chloride content of the liver, and a slight fall in the muscle. Similar changes are observed after obstruction of the jejunum. With obstruction of the cardiac end of the stomach, no change was observed.

Journal of Industrial Hygiene, Baltimore

8: 367-416 (Sept.) 1926

*Occupational Dermatoses. R. P. White, London.—p. 367.
*Hookworm Disease in Cotton Mill Villages of Alabama and Georgia. D. L. Augustine, Andalusia, Ala.—p. 382.
Is Effective Temperature or Cooling Power Better Index of Comfort? H. M. Vernon, London.—p. 392.
Effective Temperature Versus Katathermometer. C. P. Yaglou, Boston.—p. 402.

8: 417-456 (Oct.) 1926

Disease and Workmen's Compensation Act. K. W. Goadby, London.—p. 417.
Weavers' Cough. E. L. Middleton, London.—p. 428.
Dust in Cotton Card Rooms. E. L. Middleton, London.—p. 436.
Presence of Mineral Oil in Atmosphere of Cotton Spinning Rooms. E. L. Middleton, London.—p. 449.

Occupational Dermatoses.—White's classification of the dermatergoses is as follows: (1) mechanical or physical agents; (2) detergents; (3) anhydrides and desiccators; (4) hydrolizers; (5) keratin solvents; (6) protein precipitants; (7) oxidizers; (8) reducers; (9) agents which liberate free acids from salts or form toxic nitro derivatives; (10) keratogenic and neoplastic agents; (11) biotic agents; (12) sensitizers, and (13) anaphylactic agents.

Hookworm Disease in Cotton Mill Villages.—An intensive hookworm study was made by Augustine on 386 children from cotton mill villages within a heavily infested soil province, in order to determine the value of sanitation as a principal factor in hookworm control. Of the children examined, about sixty-eight had hookworm. Hookworm disease, however, was found to be limited to those children of less than three years' residence in the mill village. The number of light infestations and negative cases increased with the increasing years of residence in the sanitated mill villages. The value of sanitation was found to be reflected in both the children's weight and the hemoglobin. The mean weight and also the mean hemoglobin of children of less than three years' residence were noticeably lower than of those who had lived in the village for longer periods of time. Normal hemoglobin values were found in children of four years' residence or longer at the cotton mills. Whereas only a few hookworm treatments had been given at the mill village, the improvements in weight and in hemoglobin of children of older resident groups are attributed to sanitation. It is recommended that all children from areas heavily infested with hookworm be examined by an intensity method (Stoll method) on their entrance into mill villages; and that a standard treatment be given to all children suffering from this disease, in order to relieve suffering and bring about an earlier control of the disease than can be accomplished by sanitation alone.

Journal of Laboratory and Clinical Medicine, St. Louis

11: 1117-1222 (Sept.) 1926

*Process of Lymph Formation. M. Kayumi, Tokyo.—p. 1117.
*Antiketogenic Influence of Insulin in Diabetes Mellitus. J. A. Killian, New York.—p. 1132.
*Galactose Tolerance in Latent Tetany. M. Erdheim, New York.—p. 1140.
*Influence of L. Acidophilus on Colon-Aerogenes Group in Intestine. N. Kopeloff and P. Beerman, New York.—p. 1143.
Autonomic System: III. Reaction of Circular Muscle of Excised Surviving Small Intestine of Frog (Rana Pipiens) to Epinephrine, Pilocarpine, Atropine and Barium. G. B. Roth, Washington, D. C.—p. 1149.
Effect of Uric Acid Eliminants on Uric Acid Excretion of Dalmatian Dogs. E. E. Swanson, Indianapolis.—p. 1156.
Comparison of Cleveland and Kolmer Modifications of Wassermann Test. F. R. Lyne, Cleveland.—p. 1161.
Union Between Antigen and Antibody in Wassermann Test. S. L. Leiboff, New York.—p. 1164.
*Significance of Blood Cultures. T. C. Lawson, New York.—p. 1170.
*Laboratory Study of Extensive Epidemic of Septic Sore Throat. M. B. Coleman and M. W. Wheeler, Albany, N. Y.—p. 1180.
Method for Cultivating Anaerobes by Means of Phosphorus. P. L. Varney, St. Louis.—p. 1183.
Boltz Test in Diagnosis of General Paralysis. O. H. Boltz, New York.—p. 1187.

Process of Lymph Formation.—It is the belief of Kayumi that the lymphatic system belongs to the excreting system and that it plays a great part in regulating the constitution of the blood. An abnormal substance in the blood must be excreted on the one hand by the kidney, and on the other by the blood capillaries into the lymph spaces, where part of it will be fixed by the tissue cells and part will go farther into the lymphatics. It returns again into the circulation through the lymphatic system, to be excreted finally through the kidney. The blood capillaries act to the same purpose as the glomeruli, the latter carrying the catabolic substance out of the body, the former sending it into the lymph spaces. Hence, the blood capillaries may be called "preglomeruli."

Antiketogenic Influence of Insulin in Diabetes.—Killian states that the administration of insulin in cases of diabetes mellitus results in an immediate decrease of the ketone bodies of the blood and urine, reaching the maximum in from four to six hours. The decrease in the ketosis is accompanied by a corresponding rise in the alkali reserve of the blood plasma. The rise in the carbon dioxide capacity is associated with a proportional increase in the blood plasma p_H. The antiketogenic influence of the insulin apparently is due to the more complete oxidation of the carbohydrates stimulated by this substance.

Galactose Tolerance in Latent Tetany.—Five patients with outspoken symptoms of tetany and seven control subjects were studied by Erdheim by means of blood sugar curves as to their sugar tolerance after the ingestion of approximately 40 Gm. of galactose. It was thought that the constant changes in the carbohydrate metabolism observed in parathyroidectomized dogs might possibly be duplicated in human cases of tetany. No decrease, however, in the galactose tolerance was found in these cases; on the contrary, the tolerance to this sugar was relatively somewhat increased. The study of the galactose tolerance, therefore, does not offer a means of recognizing latent tetany in man.

Influence of B. Acidophilus on Colon-Aerogenes Group in Intestine.—Weekly quantitative determinations of bacterial groups in fecal specimens of thirty-seven epileptic patients were made by Kopeloff and Beerman over a period of five months. Twelve patients were fed 1,000 cc. of acidophilus milk daily for two months after receiving 1,000 cc. of sterile milk and 300 Gm. of lactose daily. Thirteen patients received 60 Gm. of kaolin daily for two months, and an additional amount up to 240 Gm. daily for one month. Daily records were kept of convulsions and defecations. For one month before, and for two months after treatment, as well as during treatment, observations and fecal analyses were carried out. *B. acidophilus* was recovered in varying amount from all patients ingesting *B. acidophilus* milk for two months. No *B. acidophilus* was recovered from patients receiving kaolin. Averages of the numbers of the colon-aerogenes group indi-

cated an increase when sterile milk was administered. Compared with this, *B. acidophilus* caused a diminution. When, however, the period during which *B. acidophilus* was administered was compared with the periods before and after treatment, diminution in numbers of the colon-aerogenes group occurred in some instances, and an increase in others. Kaolin gave similar but more unfavorable results.

Significance of Blood Cultures.—A total of 2,092 recorded blood cultures, taken during two years, was studied by Lawson, and the final end-results are tabulated. Altogether, 221 positive blood cultures were obtained. The proportion of deaths from all cases of septicemia to total positive blood cultures was 62.2 per cent. The proportion of known deaths from septicemia to total blood cultures taken was 6.54 per cent. The diseases with positive blood cultures totaled twenty-eight, or 26.6 per cent of the total number of conditions for which they were taken. The organisms isolated include the usual pathogenic ones, the majority of positive cultures being composed of pneumococci, *Staphylococcus aureus, B. typhosus, Streptococcus hemolyticus* and *Streptococcus viridans.* The percentage of deaths in relation to total positive cultures for each organism range from 100 per cent with gonococci, *Staphylococcus hemolyticus* and streptococci, to 61.9 per cent for *Streptococcus hemolyticus,* 50 per cent for meningococci, and 28.9 per cent for *B. typhosus.* The average percentage of deaths in relation to total positive cultures for all organisms was 72.2 per cent. The majority of deaths occurred on the same day, or within four days after the first blood culture was taken.

Cause of Epidemic of Sore Throat.—Hemolytic streptococci were found by Coleman and Wheeler to be the predominating organisms in throat cultures from the acute cases studied in an extensive epidemic of septic sore throat. The toxicity of twelve strains was tested. One produced a potent toxin neutralized by the standard scarlet fever antistreptococcus serum and also by the patient's serum. The other eleven produced little or no toxin. The precipitinogens and agglutinating antigens prepared from four of the nontoxic strains could not be distinguished from those prepared from the one toxic strain, or from the Dochez strain of scarlet fever streptococcus. Among a group of twenty convalescents, 30 per cent gave definite skin reactions to a standard scarlet fever streptococcus toxin, which is approximately the same proportion as in a group of normal persons of the same age (8 to 50 years).

Surgery, Gynecology and Obstetrics, Chicago

43: 415-558 (Oct.) 1926

Gunshot Injuries of Brachial Plexus. L. J. Pollock, Chicago.—p. 415.
*Calculi of Salivary Glands and Ducts. G. R. Harrison, Richmond, Va.—p. 431.
*Uric Acid and Uratic Stones in Kidney: Uric Acid Showers. E. Beer, New York.—p. 436.
Carcinoid Tumors of Intestines. J. A. Wolfer, Chicago.—p. 443.
*Relation of Prognosis to Histologic Findings in Carcinoma of Cervix. A. Plaut, New York.—p. 450.
*Cholelithiasis Resembling Renal Disease. R. S. Corbett, London, and C. B. Peirce, Ann Arbor, Mich.—p. 459.
Cholelithiasis in Negro. E. Bloch, New Orleans.—p. 465.
*Results with Watkins Operation for Prolapsus Uteri. L. Brady, Baltimore.—p. 476.
*Pregnancy After Salpingectomy. M. Douglass, Cleveland.—p. 480.
*Hernia of Ovary. W. J. Moore, Glasgow, Scotland.—p. 483.
*Subungual Exostoses. A. D. Kurtz, Philadelphia.—p. 488.
*Pneumatic Rupture of Bowel. G. L. Hays, Pittsburgh.—p. 491.
Operative Treatment of Goiter. F. de Quervain and G. M. Curtis, Bern, Switzerland.—p. 498.
Technic of Mayo Operation for Cystocele. J. C. Masson, Rochester, Minn.—p. 504.
Finney Pyloroplasty. J. M. T. Finney, Jr., Baltimore.—p. 508.
Amputation of Cervix with Application of Sturmdorf Flap Principle. R. W. TeLinde, Baltimore.—p. 513.
Meckel's Diverticulum: Thirteen Cases. R. M. Harbin, Rome, Ga.—p. 515.
Glazebrook Stitch Method of Closing "Difficult" Peritoneum. A. J. Ward, Morristown, N. J.—p. 518.
Review of Five Hundred Consecutive Deliveries. C. H. Davis, Milwaukee.—p. 519.
Amputation Stumps of Lower Extremities: Prolonged Disability. H. R. Conn, Akron, Ohio.—p. 524.
Results of Roentgen-Ray Therapy of Malignant Growths of Urinary Tract. L. T. Mann, New York.—p. 529.

Calculi of Salivary Glands.—Twenty-seven cases of salivary calculus are reviewed by Harrison. The parotid gland was involved in three cases, the parotid duct in seven cases; the submaxillary gland in five cases, the duct in ten cases; the sublingual gland and duct, one case each. The use of the roentgen ray proved very valuable as a means of localizing the calculus.

Uric Acid Showers.—According to Beer, if, in patients in whom the roentgen ray, cystoscopic and pyelographic studies have been negative, and who complain of typical ureter or kidney colics, the urine on standing precipitates uric acid crystals, there is some connection between this phenomenon and the syndrome of which the patient complains. The change of diet to a low protein diet will almost immediately control the symptoms.

Carcinoma of Cervix: Prognosis.—Personal study of many hundred sections leads Plaut to the conclusion that there is no reliable basis for a histologic prognosis in cervical carcinoma. The histologic picture of cancer of the cervix does not permit the establishing of well defined groups according to the type of cancer cell. The constitutional factors must be considered in determining prognosis. The influence of age must be studied anew, since the existing data are unsatisfactory. The clinical classification of carcinoma of the uterine cervix is still the best aid in making a prognosis.

Cholelithiasis Resembling Renal Disease.—The observations in the two cases reported by Corbett and Peirce bring out that there is a clinical type of cholelithiasis resembling renal disease, and that treatment of the cholelithiasis at once relieves the renal symptoms. The authors incline to the view of the chemical rather than the infective basis for gallstone formation. The gallstones might then be considered to be a cause rather than the effect of the cholecystitis.

Results with Watkins Operation.—Forty-five out of forty-eight patients on whom Brady performed the Watkins operation were completely relieved of all symptoms of procidentia and had no return of the condition. Two patients were not completely relieved of all their symptoms, but on reexamination showed no evidence of procidentia. In one instance, the only known failure in the series, after ten years the patient began to have further trouble, and a cystocele developed.

Pregnancy After Salpingectomy.—In the four cases of pregnancy following salpingectomy cited by Douglass, the resected ovary was sutured into the cornu of the uterus, only unilateral implantation being employed.

Hernia of Ovary.—A survey of the literature has convinced Moore that the correct number of cases of inguinal hernia recorded to date, with the ovary as the only content of the sac, is 137. To this number he adds one case.

Subungual Exostoses.—Forty-two cases are reviewed by Kurtz. There were three times as many females as males. Antecedent trauma was given as a cause in twenty-eight cases. In twelve cases, a history of long continued suppuration from ingrown nail was given. In two cases, both factors were present. The diagnosis is said to be easily made. The treatment is operative.

Pneumatic Rupture of Bowel.—Hays reviews twenty-two cases already on record, and reports one additional case in which the rupture was caused by the entrance into the rectum of air under a pressure of 95 pounds. The mortality in this series of cases that went to operative intervention was 50 per cent. The author's patient recovered.

West Virginia Medical Journal, Charleston

22: 505-560 (Oct.) 1926

Diagnosis and Treatment of Urinary Stasis. A. E. Goldstein, Baltimore.—p. 505.
Early Operation in Diseases of Biliary Tract. C. A. Groomes, Elkins.—p. 511.
Cholecystectomy vs. Cholecystotomy. H. C. Powell, Morgantown.—p. 514.
Complications Incident to Operative Treatment of Inflammatory Diseases of Gallbladder. A. P. Heineck, Chicago.—p. 519.
Climate as Related to Treatment of Pulmonary Tuberculosis. G. H. Barksdale, Charleston.—p. 528.
General Anesthesia. E. B. Tucker, Morgantown.—p. 531.
Measles. D. Berman, Moundsville.—p. 539.
Shoe Dye Poisoning. C. A. Ray, Charleston.—p. 542.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

Acta Scholae Medicinalis, Kioto, Japan

8: 155-298, 1925

Physicochemical Investigation of Serum: I. K. Inouye.—p. 155.
Id.: II. K. Inouye.—p. 159.
Biologic Action of Bacterial Toxins on Organs of Rabbit. H. Shibata.—p. 165.
Number and Size of Glomeruli in Kidneys of Some Mammals. T. Saëki.—p. 189.
*Studies on Resorption, Secretion and Excretion: Permeability of Alveoli of Lungs to Soluble Drugs and Living Bacteria. K. Hirakawa.—p. 197.
Extirpation of Parathyroid in Domestic Fowl: I. H. Yamaoka.—p. 209.
Id. H. Yamaoka.—p. 241.
Dynamics of Heart. Diminution of Production of Mechanical Energy. N. Ishida.—p. 265.
*Studies on Resorption, Secretion and Excretion: Permeability of Alveoli of Lungs to Dyes. K. Hirakawa.—p. 279.

Permeability of Lung Alveoli to Drugs and Bacteria.—Hirakawa found that the normal alveoli of the lungs of the rabbit are easily permeated by solutions of drugs which show almost the properties of crystalloids and are almost not permeated by bacterial suspensions.

Permeability of Lung Alveoli to Dyes.—Hirakawa states that the normal alveoli of the lungs of the rabbit allow many dyes in aqueous solution to pass through. The basic dyes pass easily without regard to their grade of diffusion; dyes whose grades of diffusion are high also pass easily, but those with low grades of diffusion pass with difficulty. The lipoid-soluble ones seem to pass easier than the lipoid-insoluble ones. Alcoholic solutions of dyes act similarly to aqueous solutions. Dyes injected into the alveoli never penetrate into the pleural cavity or into the circulation.

Annals of Pickett-Thomson Research Laboratory, London

2: 29-199 (July) 1926

Pleomorphic Gram-Negative Bacillus Associated with Measles. D. Thomson.—p. 29.
Etiology of Tuberculosis in Relation to Satisfactory Immunization in Cattle. J. J. Thomson.—p. 31.
Corynebacteria (Diphtheria Bacillus and "Diphtheroids"): Microphotography Aid to Identification. D. Thomson and R. Thomson.—p. 51.

2: 1-28 (Sept.) 1926

*Measles: New Pleomorphic Gram-Negative Bacillus. D. Thomson.—p. 1.
Four New Species of Gram-Negative Bacilli from Respiratory Tract. D. Thomson.—p. 13.
Bacterium Pneumosintes Vaccines; Detoxicated Versus Toxic. D. Thomson and R. Thomson.—p. 17.
Classification and Identification of Certain Chromogenic Bacteria by Microphotography. D. Thomson and R. Thomson.—p. 21.

New Measles Germ.—Although the pleomorphic gram-negative bacillus discovered by Thomson in the throats, conjunctiva and more especially in the skin rash of measles cases is very difficult to explain away, it did not give definite agglutination with the serum of convalescent measles cases, nor was there any positive complement fixation.

Brain, London

49: 257-436 (Sept.) 1926

*Idiopathic Narcolepsy: Mechanism of Sleep. W. J. Adie.—p. 257.
*Study of Deposits Containing Calcium and Iron in Brain. E. C. Eaves.—p. 307.
*Optic Nystagmus: Value in Localization of Cerebral Lesions. J. C. Fox and G. Holmes.—p. 333.
Explanation of Two-Stage Recovery of Sensation During Regeneration of Peripheral Nerve. J. S. B. Stopford.—p. 372.
Familial Claw-Foot with Absent Tendon-Jerks: "Forme Fruste" of Charcot-Marie-Tooth Disease. C. P. Symonds and M. E. Shaw.—p. 387.
Psychobiologic Conception of Consciousness and Disorders in Epileptic. L. P. Clark, New York.—p. 404.

Idiopathic Narcolepsy.—Adie is convinced that Gelineau's narcolepsy is a disease *sui generis*. It is not very rare; most of the cases are mistaken for epilepsy, some for hysteria; it is certainly distinct from both. The name narcolepsy should, he says, be reserved for the idiopathic disease; it should not be applied to excessive or untimely sleep when this is a symptom of some other disease; confusion would be avoided by using the terms idiopathic and symptomatic narcolepsy. Other names that have been proposed for the disease have nothing to recommend them; the name narcolepsy should be retained. The "short narcoleptic attacks" of Friedmann are distinct from the narcolepsy of Gelineau, and as they were described later they should bear another name; the name pyknolepsy is suitable for them. The sleep in narcolepsy is indistinguishable from normal sleep. The attacks on emotion, in spite of contrary opinions, are highly characteristic of the disease. The terms cataplexy and cataplectic are suitable for them. Sleep and cataplectic attacks, though apparently different in nature, are essentially the same; both result from sudden inhibition. Pawlow's conception of the nature of normal sleep receives confirmation from this study of narcolepsy. The symptoms in narcolepsy become comprehensible in the light of Pawlow's researches. Sleep and cataplexy may follow epidemic encephalitis and produce a condition indistinguishable from true narcolepsy; these patients tend to recover, but true narcolepsy persists throughout life. True narcolepsy is a functional disorder of the nervous system, probably an undue fatigability of nerve cells, in persons with a peculiar kind of nervous activity that allows excessive responses to emotional stimuli and favors the spread of inhibitions.

Calcification of Brain Tumor.—Two cases of calcification in angiomas of the brain are described by Eaves. Microchemical reactions show that iron is present in some regions and absent in other areas. Chemical analysis shows that the deposit contains calcium and iron, phosphates, carbonates and traces of magnesium. The calcium occurs as phosphate and carbonate, the iron partly as phosphate, partly as some other insoluble compound which is not hemosiderin. In one case of epidemic encephalitis, iron was present in the walls of the blood vessels of the dentate nucleus of the cerebellum. A small amount of iron-containing deposit was present in the corpus striatum, but this was not marked. The tegmentum of the midbrain contained a deposit of concentric masses similar in structure to the so-called psammoma bodies. Some of these structures gave an iron reaction, but other similar bodies contained little or no iron. In one case with an extreme degree of calcification in the corpora striata, and dentate nuclei of the cerebellum, but none in the midbrain, no signs of parkinsonism were observed clinically. The epidemic encephalitis case, in which the condition of parkinsonism was extreme, showed only slight deposits in the corpora striata and dentate nuclei, but a fairly large deposit in the midbrain, and changes both in the nerve cells of the red nucleus and substantia nigra. In five of the six cases of general paralysis of the insane, iron-containing pigment was found in the walls of the blood vessels, particularly of the cerebral cortex. Histologically, this deposit does not resemble that in the two cases of angiomata of the brain or that in epidemic encephalitis. In staining reactions and solubility it closely resembles the hemosiderin in the liver in a case of pernicious anemia.

Localization Value of Optic Nystagmus.—Observations made by Fox and Holmes tend to support Stenvers' hypothesis that reflex centers for optic nystagmus lie in the occipital lobe and in the second frontal convolution, and that these are connected by a reflex path which runs through the white matter of the hemisphere. Nystagmus to the opposite side is affected when a lesion lies in the supramarginal or angular gyrus, in the adjacent portion of the parietal and temporal lobes, in the posterior end of the second frontal convolution, or along a line joining this with the angular gyrus.

British Medical Journal, London

2: 549-582 (Sept. 25) 1926

Common Mistakes in Artificial Feeding of Infants. E. Pritchard.—p. 549.
*Schick Test: Scheme for Active Immunization Against Diphtheria in Public Health Practice. E. Donaldson.—p. 551.
*Case of Chloroma in Child. F. M. B. Allen.—p. 553.
*Abdominal Crises of Pernicious Anemia. H. Bailey.—p. 554.
*Treatment of Varicose Veins by Injection. A. H. Douthwaite.—p. 554.
Place of Gastrojejunostomy in Gastric and Duodenal Surgery. H. J. Paterson and H. Finsterer.—p. 555.
Stovaine in Otorhinolaryngology. F. Muecke.—p. 561.
Epilepsies. G. D. Parker.—p. 562.

Immunization Against Diphtheria.—Donaldson is of the opinion that with careful preparation of the public by fully explaining the facts about diphtheria, and with the cooperation of the general practitioners, modern methods of diphtheria prevention could be employed on a national scale; and that a campaign on these lines, resolutely carried out, would result in the reduction of diphtheria incidence to negligible proportions. If properly organized, the cost of such a campaign would be extremely small, compared with the enormous cost of treating thousands of cases annually.

Chloroma in Child.—Chloroma in children is a very rare occurrence. Allen's patient was 4½ years of age. The chief subject of complaint by the parents was pallor, weakness and cough. When the child was first seen, there was a right-sided facial paralysis, enlarged spleen, and the blood picture of a fairly acute myeloblastic leukemia. With the onset of hemorrhages, purpura and rapid growth of the tumors, deterioration was rapid and death quickly supervened. The piece of tumor removed was green.

Abdominal Crises of Pernicious Anemia.—Bailey warns against mistaking the abdominal crisis of pernicious anemia for one of the recognized acute abdominal conditions, such as perforated gastric ulcer or acute pancreatitis. He reports two cases. In one, a diagnosis of perforated gastric ulcer was made and a laparotomy was performed. The only abnormality found was a very distended gallbladder. In the second case, a diagnosis of gallstone colic was made but no operation was performed as the apparently pathognomonic symptoms vanished. A color index gave a typical reading for pernicious anemia.

Treatment of Varicose Veins.—As the result of two years' experience in the production of thrombosis in varicose veins, Douthwaite is convinced that this line of treatment is superior to excision. He follows the procedure originally suggested by Genevrier. The solution used is composed of 4 Gm. of quinine hydrochloride and 2 Gm. of urethane in 30 cc. of distilled water. A pneumatic tourniquet is applied with moderate pressure above the line of vein to be dealt with, and 0.25 cc. of the solution is injected into the lumen through a fine hypodermic needle. Perivenous administration is usually unnecessary; it is not, however, contraindicated, as the resultant inflammation is not severe, provided only a few minims are introduced outside the vein. The puncture is sealed with collodion, which may be removed the same night, and the injection is repeated about 2 inches (5 cm.) farther up the vein. Of the eighty-eight cases so treated, all have been completely successful, and no recurrences have as yet been observed.

Fukuoka Medical Journal, Fukuoka, Japan

19: 41-43 (Sept.) 1926

Proteins of Blood Plasma. Y. Kozawa.—p. 41.
Pathologic Experiences of Smelling. T. Yurino.—p. 43.

Glasgow Medical Journal

106: 153-216 (Sept.) 1926

Cholecystography by Means of Sodium Tetraiodophenolphthalein. A. B. MacLean.—p. 153.
Commentary on Seventeenth Century Review of Arts and Sciences, Including Medicine. J. Fergus.—p. 159.
*Case of Stokes-Adams Syndrome Treatment by Epinephrine. A. Patrick, M. Chalmers and R. M. C. Crawford.—p. 183.

Epinephrine Hydrochloride in Stokes-Adams Syndrome.—The case cited by Patrick et al. shows the value in the treatment of Stokes-Adams syndrome of subcutaneous injections of epinephrine hydrochloride, 1:1,000, in 0.5 cc. doses.

106: 217-280 (Oct.) 1926

*Leptothricosis. I. Mackenzie.—p. 217.
*Etiology of Psychasthenia. R. S. Gibson.—p. 230.
*Capillary Vessels in Disease. H. M. Walker.—p. 240.
Arteriovenous Aneurysm of Popliteal Vessels. G. H. Stevenson.—p. 251.
Hemoptysis Due to Rubber Tube Retained in Pleural Cavity. G. H. Stevenson.—p. 254.
Ileocecal Intussusception Followed by Ileo-Ileal Intussusception. C. Bennett.—p. 256.

Leptothricosis.—Mackenzie indicates that there is a group of febrile infections quite distinct from pneumonia, typhoid, typhus, paratyphoid, tuberculosis or sepsis, which run a somewhat variable course under various guises, but which, on the whole, are not accompanied by the severe toxic reactions incident to the usual bacterial invasions. The identity of the pathologic reaction is associated with the presence of a leptothrix or of minute organisms which, when subjected to suitable cultural conditions, evolve into a filamentous form which spores at room temperature. The negative condition of diagnosis is that they are distinct from the usual febrile states. Central pneumonia, influenza, "toxic" absorption, are some of the terms applied to illnesses which really never disclose themselves in such a manner as to justify a diagnosis. Mackenzie is convinced that within the last year cases have been seen which, if thoroughly examined, would have declared themselves as leptothrix infections. It would appear that at times the organisms are present in a particular form or stage of development in enormous numbers. They are invariably present in the cerebrospinal fluid at some time in small mulberry clusters of gram-negative coccobacilli. This may be associated with an infiltrative meningitis, or merely with a meningismus in which there are few or no abnormal cellular elements, but in which there are headaches, irritability and emotional excitement. In other cases, pneumonic patches can be detected.

Psychasthenia.—In Gibson's opinion the term "maladjustment neurosis" is eminently suitable when applied to psychasthenia. The doubts, hesitations and obsessions combine to make the subject's life miserable, and to impair his relations with society. The tendency to impulsive acts, whether these are overcompensations for a state of doubt or the unrestricted working of a primitive tendency, often leads to conduct which is out of harmony with the environment, but which the subject may be unable to control. Even the physical ties, though minor manifestations, cause annoyance. In the second place, it is obvious that psychasthenia does not necessarily imply impairment of intellect. On the contrary, in order to provide for the easy excitability of the various instinctive activities, a relatively highly organized intellectual aspect of mind is a necessity. The defect is on the side of character in action.

Capillary Vessels in Disease.—Walker believes that a normally functioning capillary circulation is an important nonspecific immunity mechanism by maintaining the intimate cellular nutrition in a normal healthy state, and that capillary dysfunction will at once render the tissues more liable to the attack of infective organisms.

Indian Medical Gazette, Calcutta

61: 425-476 (Sept.) 1926

Operative Treatment of Fractures. H. Hallilay.—p. 425.
Surgery of Ancient Hindus. S. N. Consul.—p. 433.
*Infantile Cirrhosis of Liver. V. B. Green-Armytage.—p. 441.
*Nondiluted Milk for Infants. C. C. Murison.—p. 444.
*Curious Preliminary "Treatment" for Couching for Cataract. B. K. N. Rao.—p. 446.
*Foreign Body in Rectus Abdominis Muscle. I. R. Anderson.—p. 446.
Three Cases of Bronchial Spirochetosis. J. E. Lesslar and K. Kanagarayer.—p. 447.
Case of Acute Parenchymatous Glossitis. G. S. Chawla.—p. 448.
Infection in Infant with Giardia (Lamblia) Intestinalis. K. L. B. Mallik.—p. 448.
*Compound Fracture of Humerus Treated by Simple Method. H. A. R. Soudager.—p. 449.
Interstitial Fibroid of Fundus Uteri Causing Acute Complete Inversion of Uterus. A. C. Bharadwaj.—p. 449.

Infantile Cirrhosis of Liver.—Green-Armytage has seen sixty-three cases of what he terms intercellular hepatic cirrhosis in children ranging in age between 5 months and 3½ years. Seventeen children were on the breast, and in twelve out of these seventeen cases the mother was a multipara. In all the remainder, the children, though temporarily on the breast, were suffering from obvious dietetic errors. As to the etiology of this disease, Green-Armytage says: If a mother feeds incorrectly before the birth of her child she may predispose her infant to develop this disease. A nursing mother frequently suffers from pyorrhea, or constipation resulting in, or the result of, autointoxication. The consequence of this is that the baby obtains a supply of milk from its mother lacking in such stimulatory hormones, as calcium, iron, phosphorus, and iodine—such deficiencies cul-

minating in intestinal and hepatic derangement in the infant. An infant reared on patent foods, or given indiscriminate articles of diet by its parents, is the one most frequently seen to develop this form of hepatitis.

Nondiluted Milk for Infants.—Murison is of the opinion that if cow's milk has to be given to an infant it must be given undiluted and in small quantities. The quantity of the milk for each feeding, and the number of feedings, depend on the weight and age of the infant, and also on its capability of digesting the curds. If the conditions are favorable, the quantity of milk in the feedings is judiciously increased, the number of feedings in twenty-four hours reduced and the interval between feedings lengthened. On the other hand, if the conditions are not favorable, the quantity is reduced, and it may even be necessary to stop giving the undiluted cow's milk and in its stead to give whey, albumen water or peptonized cow's milk, and when the conditions become favorable to return cautiously to giving undiluted cow's milk. Murison asserts that unboiled cow's milk is not only more digestible but also more nutritious than boiled cow's milk.

Preliminary Treatment for "Couching."—Rao says that the Mohammedan coucher places a suture with an ordinary cotton thread into the eye about one-fourth inch (6 mm.) from the cornea, enclosing in its grip about one-fourth inch of conjunctiva and subconjunctival tissue. Two knots are tied, and the threads are left about 1½ inches (37 mm.) long. On the fourth day, the cataract is removed.

Foreign Body in Rectus Abdominis.—The following history was given by Anderson's patient: Three years previously she had been two months pregnant, and abortion had been procured by the insertion of twigs into the uterus. She had severe pain in the right side of the abdomen, but that cleared up in a month by the use of medicine. Since then she had had no illness at all until pain in the left rectus muscle manifested itself. A distinct swelling was present. This was incised. The swelling was found to be in the muscle. On deeper incision the knife entered a cavity in the center of the muscle. A finger was inserted and there was felt a foreign body. On extraction this proved to be a twig 5½ inches in length and one-sixth inch in diameter, lying in the vertical line of the muscle with its center just at the level of the umbilicus. There was no sign of pus, but the twig had a very foul smell. The cavity had no connection with the abdominal cavity.

Treatment of Fracture of Humerus.—In a case of fracture in the upper third of the humerus, Soudager immobilized the arm by bandaging it to the side of a body, the arm hanging straight down.

Journal of Oriental Medicine, Dairen, South Manchuria

5: 27-34 (Sept.) 1926

Arteriosclerosis. M. Imai.—p. 27.
Intermediate Metabolism in Avitaminosis: Disturbance of Water Metabolism. Y. Jono.—p. 29.
Action of Acetylcholine, Neurine and Betaine on Blood Sugar; Influence on Action of Epinephrine and Insulin. S. Imai.—p. 31.
Oxygen Consumption of Brain. C. L. Hou and K. Sugiura.—p. 32.
Case of Purpura Annularis Teleangiectodes. T. Murata.—p. 33.
External Pelvic Measurements of Japanese and Chinese Women. T. Sato.—p. 34.

Lancet, London

2: 633-686 (Sept. 25) 1926

Drastic Reforms in Teaching and Practice of Midwifery. G. W. Theobald.—p. 633.
*Subcutaneous Fibroid Syphiloma: Rare Manifestation of Late Syphilis. C. Worster-Drought.—p. 637.
*Prognosis of Auricular Fibrillation. H. W. Jones.—p. 640.
*Carbohydrate Metabolism in Diphtheria. F. J. Hector.—p. 642.
Dosage in Phototherapy. A. Eidinow.—p. 645.
*Spinal Anesthesia in Intussusception of Infants. H. Bailey.—p. 648.
Six Faceted Calculi Found in Substance of Submaxillary Gland. W. I. Daggett.—p. 649.
*Case of Simultaneous Abdominal and Tubal Pregnancy. M. Sourasky.—p. 650.

Subcutaneous Fibroid Syphiloma.—In the case described by Worster-Drought, bilaterally symmetrical lesions involved the ulnar nerves and yielded rapidly to antisyphilitic treatment.

Prognosis of Auricular Fibrillation.—Jones asserts that (1) auricular fibrillation is of more serious significance in senile than in rheumatic heart disease; (2) in cases of mitral stenosis, the presence of fibrillation makes little difference to the expectation of life; (3) in cases of aortic regurgitation the expectation is better when fibrillation is present than with a normal rhythm; (4) the prognosis is better with aortic regurgitation than with mitral stenosis; (5) with marked cardiac enlargement the outlook is more grave; (6) the expectation of life is longer in females than in males; (7) in the electrocardiographic observations, the presence of a bizarre Q-R-S is of most significance in the prognosis.

Carbohydrate Metabolism in Diphtheria.—The carbohydrate metabolism of eight cases of diphtheria was studied by Hector. In cases of severe diphtheria, during the stage of toxemia and acidosis, carbohydrate metabolism was disturbed and unstabilized. The concentration of the fasting blood sugar was abnormally low. There was a marked defect in the storage mechanism. The ability of the tissues to utilize glucose was diminished. This disorganization of carbohydrate metabolism passes away with the stage of diphtheritic intoxication. Hector suggests that the cause of the metabolic disorder is probably to be found in interference with the functions of the liver, the endocrine glands and the nervous system through the action of the diphtheria toxin.

Spinal Anesthesia in Intestinal Obstruction in Infants.—Bailey sets forth some advantages of extending spinal anesthesia to intestinal obstruction during infancy, and reviews briefly his results in thirteen cases of ileocolic and one case of ileocecal intussusception.

Simultaneous Abdominal and Tubal Pregnancy.—Sourasky reports the case of a woman who lived fairly comfortably for nearly two and a half years with two dead fetuses in her abdomen: (*a*) one about eight months old lying in a special sac which was tightly adherent to the viscera, and apparently originating from the upper pole of the uterus from a rudimentary horn; (*b*) the other in the right fallopian tube more than three months old, which had been there for an undetermined time. The placenta of the large fetus was gangrenous, and the fetus itself was just beginning to undergo decomposition.

Medical Journal of Australia, Sydney

2: 331-364 (Sept. 11) 1926

Albuminuria of Pregnancy, Preeclamptic Toxemia and Eclampsia; Estimation of Urea Content of Blood. A. J. Cunningham.—p. 331.
Cyst of Astragalus. R. B. Wade and K. Inglis.—p. 345.
Hemangiolymphangioma of Abdominal Wall and External Genitals in Child. A. Aspinall and K. Inglis.—p. 345.
Aneurysm of Hepatic Artery Associated with Acute Endocarditis. E. H. Stokes and K. Inglis.—p. 346.

2: 365-400 (Sept. 18) 1926

*Leprosy Problem. E. H. Molesworth.—p. 365.
*Tuberculoid Leprosy. A. H. Tebbutt.—p. 381.
Hydatid of Lung. E. H. Stokes.—p. 386.

Leprosy Problem.—Molesworth pleads for less severe restrictions for lepers on the basis that leprosy is not nearly as infective or dangerous as tuberculosis or syphilis, and that the victims of these diseases are allowed to live and work, spreading their infection and filling hospitals and insane asylums, with nothing but mild legislative restriction to prevent their becoming invalid and insane by the thousand. Molesworth says that this horror of leprosy is nothing but a survival of a superstitious belief such as passing under a ladder or witchcraft, which came down to us from our ancestors, and which should be discarded as we have shed others. If we called leprosy by another name would it not smell much sweeter? Let us call it bacillary granuloma or bacillary neuritis and where, with modern methods of treatment, will the horror go? We should never know where—into the Ewigkeit—into the limbo of other superstitions.

Tuberculoid Leprosy.—Tebbutt reports cases to establish the identity of tuberculoid leprosy. He says that the recognition of this type of lesion will tend to prevent mistakes in early diagnosis in some difficult cases. The histologic method should be employed, as well as a bacteriologic search, and the Wassermann test should be carried out. A careful clinical examination, directed particularly toward finding anesthesia, is especially important. The lesions of tuberculoid leprosy in Australian white people are described. A doubtful case and an early nodular case are also included.

Bulletin de l'Académie de Médecine, Paris

96: 93-111 (Oct. 5) 1926

Measures for Preventing Spread of Smallpox. L. Camus.—p. 100.
*Prevention of By-Effects of Spinal Anesthesia. Daniel.—p. 105.

Intravenous Injections of Cerebrospinal Fluid for Prevention of By-Effects of Spinal Anesthesia.—Daniel considers that the by-effects of spinal anesthesia are of anaphylactic nature, and are due to disturbance of the vagosympathetic equilibrium. A small quantity of cerebrospinal fluid introduced into the blood stream may cause a slight shock, entailing desensitization of the organism for a certain time. The shock from the anesthetic may thus be averted. With the patient in the sitting position, from 5 to 10 or more cubic centimeters of cerebrospinal fluid is withdrawn. The anesthetic is then injected; the patient is made to lie down and told to breathe deeply. The fluid removed is injected subcutaneously or into the vein at the bend of the elbow. Five or six minutes later the operation may start. In thirty-four cases, he used the subcutaneous; in sixty-six, the intravenous route. The immediate results were better with the latter. The pulse rate increased after two or three minutes, going up to 110 pulsations; at the end of fifteen minutes it was normal. Respiration was slightly accelerated for six minutes following the injection. The color of the face remained good throughout the operation. Nausea and vomiting were absent. The late results were also excellent. It appears that by stimulating the sympathetic, the injection of cerebrospinal fluid increases the arterial pressure and, secondarily, the cerebrospinal pressure, because of the parallelism existing between the two.

Comptes Rendus de la Société de Biologie, Paris

95: 597-828 (Sept. 21) 1926. Partial Index

Analogy Between Sporogeny and Bacteriophagia. L. Rosenthal.—p. 612.
Intradermal Reaction to Dysentery Toxin. C. Zoeller and P. Lesbre.—p. 631.
Liberation of Hemoglobin in Hemolysis. J. Comandon and P. de Fonbrune.—p. 635.
*Extracts of Embryos or of Regenerated Skin in the Healing of Wounds. P. Carnot and E. Terris.—p. 655.
*Increase of Erythrocytes in Pulmonary Embolism. L. Binet and R. Williamson.—p. 663.
*Decrease of Glycemia from Sulphur. R. Foncin and J. Sandor.—p. 697.
*Reactivation of Specific Antibodies in Pulmonary Tuberculosis. C. Duprez.—p. 716.
Anticoagulative Action of Zinc Sulphate. L. Mélon.—p. 726.
Action of Radon on Antibodies. R. Bruynoghe.—p. 736.
Action of Formaldehyde on Antibodies. A. Baivy.—p. 737.
*Recurrent Fever Treatment of Epidemic Encephalitis. H. Marcus et al.—p. 749.
Fixation Reaction in Scabies. S. Nicolau and A. Banciu.—p. 753.
*Insulin and Secretion of Bile. I. I. Nitzescu.—p. 773.

Influence of Extracts of Embryos or Regenerated Skin on Healing of Wounds.—In the treatment of rebellious wounds Carnot and Terris used powder or extract prepared from embryos or from the skin over healed wounds which had been produced on the shaved back of rabbits. In the case of a large burn, applications of the embryo powder resulted in complete healing in less than a month, after all usual measures had failed. Dressings with glycerol extract of regenerated skin, incorporated in agar gelatin, were applied to a trophic ulcer in the scar of an old burn, occupying the entire lateral surface of the thigh. It healed in one month, after various other dressings, used for two months, had been without avail. Another trophic ulcer (in a favus scar) healed after four or five dressings with a similar extract. A large varicose ulcer was entirely cured in five weeks with these dressings, applied at intervals of three days. No internal remedies or immobilization were added to the treatment.

Mechanical Pulmonary Embolism Inducing Lasting Increase of Erythrocytes.—Binet and Williamson produced pulmonary embolism in rabbits by injecting a lycopodium suspension into the auricular vein. Examination of the blood revealed a considerable increase of erythrocytes, occurring in two phases. The first phase set in immediately and lasted from eight to twelve days. The second phase started at the end of two or three weeks, the number of erythrocytes increasing gradually to a maximum in the third or fourth month. This polycythemia persisted over six months. The number of erythrocytes was increased in the peripheral and in the central blood stream. They appeared normal.

Lowering of Glycemia After Injection of Sulphur.—Foncin and Sandor conclude that the reduction of glycemia following injections of sulphur is due not to a specific action of the sulphur molecule but to colloidal shock. This, they say, is proved by the following facts: The decrease of glycemia always parallels that of the leukocytosis. It occurs only in persons with vagotonia, particularly responsive to all shock-inducing agents. In normal persons glycemia remained unchanged and in those with sympathicotonia it even increased. A similar decrease of glycemia could be induced by other colloidal substances besides sulphur. Sulphur cannot be considered a therapeutic agent in diabetes. Indeed, injections of a sulphur preparation, on six successive days, influenced neither glycemia, glycosuria nor acetonuria in diabetics.

Reactivation of Specific Antibodies in Pulmonary Tuberculosis.—Duprez' observations were made on ten patients with various forms of pulmonary tuberculosis, who presented a negative reaction to Besredka's tuberculous antigen. The reaction became strongly positive in all three weeks after a subcutaneous injection of 2 cc. of horse serum. This did not occur in clinically nontuberculous individuals. This suggests a possible way to unleash the activity of tuberculous antibodies and consequently to enhance the diagnostic value of the Bordet-Gengou reaction. The latter is usually negative in 15 per cent of cases of unquestionable pulmonary tuberculosis.

Recurrent Fever Treatment of Chronic Epidemic Encephalitis.—Marcus, Kling and Höglund inoculated patients suffering from chronic epidemic encephalitis with an emulsion prepared from *Spirochaeta duttoni*. From 1 to 2 cc. of the emulsion was injected in the triceps. This induced a paroxysm of recurrent fever two or three days later, succeeded by three or five further paroxysms. The recurrent fever disappeared spontaneously. Eleven of eighteen patients thus treated presented a grave form of epidemic encephalitis of from three to six years' standing. Thirteen of the patients were under observation from one to three and one-half months after the inoculation. In twelve, there was marked improvement, which was maintained in all, and in some was even progressing. Experiments are being carried on to determine the mechanism of action of recurrent fever on the encephalitic process.

Influence of Insulin on Biliary Secretion.—Nitzescu's experiments were conducted on dogs. Injections of insulin notably increased the secretion of bile after ingestion of milk. The secretion was highest at the third hour, decreasing gradually to normal by about the fifth hour. Injection of insulin was without effect if it was preceded by that of atropine. Further research may determine whether the cholagogue action of insulin occurs through the instrumentality of nervous fibers or of body fluids.

Gynécologie et Obstétrique, Paris

14: 81-144 (Aug.) 1926

Roentgenography of Uterus and Tubes. Cotte and Bertrand.—p. 81.
*The Pressure in Intra-Uterine Injection of Iodized Oil. C. Béclère.—p. 105.
Sterility of Tubal Origin. M. G. Serdukoff.—p. 111.

Control of Pressure in Intra-Uterine Injections of Iodized Oil.—Béclère believes that roentgen-ray exploration of the uterus and adnexa with the help of lipiodol cannot be complete unless the cervix is plugged, to prevent escape of the solution. This is especially important in testing tubal permeability. For this purpose he uses a canaliculated, olive-tipped rubber sound of suitable diameter. The iodized oil is injected under a pressure of 30 cm. of mercury (never more). Stress is laid on the fact that a constant pressure should be maintained throughout the examination, which requires at most ten minutes. With the pressure controlled by a manometer and never exceeding 30 cm., pain or complication of any kind was not observed in his cases (more than thirty) so far. With a pressure of 40 cm. of mercury, the lipiodol may enter the blood vessels.

Médecine, Paris

7: 789-864 (Aug.) 1926. Partial Index

Pediatrics in 1926. P. Lassablière.—p. 789.
Sclerosis of Lungs and Bronchi in Childhood. Nobécourt.—p. 803.
Pyelocystitis in Infancy. P. Rohmer.—p. 814.
Secondary Paralysis in Children. L. Babonneix.—p. 826.
*Tuberculous Gummas in Infants. Péhu.—p. 828.
Treatment of Stomatitis in Children. G. Blechmann.—p. 844.
Iron Medication. H. Dorlencourt.—p. 848.
*Traumatic Induration of the Skin in the New-Born. G. L. Hallez.—p. 856.
Nasal Permeability in Children. Du Pasquier.—p. 860.

7: 3-48 (Aug.) Supplement

Tetany in Children. F. Saint Girons.—p. 3.

Subcutaneous Tuberculous Gummas Observed in Infancy.—Péhu discusses the evolution of the subcutaneous tuberculous gummas which develop in infancy independently of lesions of the bone or synovial membrane, and examines their place in the general scheme of the infection. The primary site of tuberculosis in infancy is most often the pulmonary parenchyma, but the lesion here may not be revealed by local physical signs nor be demonstrable by the roentgen ray. The second phase of the infection is characterized by involvement of the glands. Invasion of remote parts, forming the third phase, is not constant. If it occurs, it is often the skin which is affected. In infancy tuberculosis of the skin appears predominantly under the form of subcutaneous tuberculous gummas; in children over 3 years old, as erythema nodosum; in adolescents, as Bazin's erythema induratum.

Skin Induration in the New-Born from Obstetric Traumatism.—Hallez calls attention to an induration of the skin, appearing five to ten days after birth on parts which have been exposed to obstetric traumatism. The induration, in the form of small nodules or larger patches, covering in some cases the whole deltoid region or the entire back, is painless. There is redness, which disappears under pressure. The lesion develops in a few hours and clears up without treatment at the end of several weeks or months. The infant's general condition is unaffected. This traumatic induration or pseudoscleroderma is easily distinguishable from true scleroderma or erysipelas.

Paris Médical

61: 245-276 (Oct. 2) 1926

Neurology in 1926. A. Baudouin and H. Schaeffer.—p. 245.
Biologic Reactions and Clinical Symptoms in General Paralysis. A. Sézary and A. Barbé.—p. 258.
Paralytic Flexion with Pseudobulbar Syndrome. T. Alajouanine.—p. 266.
*Abscesses of the Frontal Lobe from Infections of the Face. P. Mathieu and N. Péron.—p. 269.
Subacute Anterior Poliomyelitis. A. Baudouin et al.—p. 273.

Abscess of the Frontal Lobe from Local Infection of the Face.—Mathieu and Péron describe two cases of abscess of the frontal lobe following infection of the face or forehead. In one instance, the origin of the infection was a wound in the upper internal angle of the orbit from a blow. The patient developed cerebral symptoms about the twentieth day after the accident. No trace of a scar could be found on examination. In the other instance, the abscess followed a suppurative osteitis of the frontal bone, apparently of syphilitic origin. The usual syndrome of abscess of the brain was incomplete in both patients. The diagnosis was suggested largely by the history in one, by the scar in the other, and confirmed by necropsy and operation, respectively.

Presse Médicale, Paris

34: 1249-1264 (Oct. 6) 1926

*Glycosuria and Glycuronuria. H. Roger.—p. 1249.
Remote Results of Resection of the Stomach for Cancer. X. Delore et al.—p. 1250.
New Procedure for Artificial Pneumothorax. J. F. Freixas.—p. 1253.
Functional Albuminurias. J. Girard.—p. 1254.
Treatment of Seasickness. G. Ichok.—p. 1255.

Glycosuria and Glycuronuria; Prognostic Value.—Roger investigated the conditions affecting the elimination of carbohydrates, particularly glycuronic acid. Experiments on dogs showed that physiologic influences, such as prolonged fasting or special diets, modified but little the carbohydrate content of the urine. In single clinical cases of obstruction of the common bile duct, febrile jaundice, secondary cirrhosis of the liver from spirochetosis, and alcoholic hypertrophic cirrhosis, and in eight cases of atrophic cirrhosis there was a close correlation between the amount of glycuronic acid in the urine and the gravity of the lesion. As long as the function of the liver and the production of glycogen were satisfactory, the urinary elimination of glycuronic acid remained almost normal. On the other hand, the glycuronic acid in the urine was much decreased when the hepatic lesion became aggravated; on recovery it became normal again. The chemical procedure used for detection and measurement of the glycuronic acid is given.

Revue Neurologique, Paris

2: 129-208 (Aug.) 1926

Roentgenotherapy of Tumors of Infundibulum and Pituitary. G. Roussy et al.—p. 129.
Posture and Attitude Reflexes. G. Bychowski.—p. 145.
*Babinski's Sign Without Pyramidal Lesions. A. Rouquier and D. Couretas.—p. 167.

Babinski's Sign in Lumbosacral Funiculitis; Its Peripheral Origin.—In one of the two cases described, the patient had had an acute attack of lumbosacral funiculitis of sensory and motor type, of spondylitic origin. The muscles supplied by the crural and by both sciatic nerves on one side were atrophic. A typical Babinski sign was present. Clinically, the function of the flexors as well as of the extensors of the toes appeared unimpaired, but the electric reactions revealed less excitability in the flexors than in the extensors. On improvement in the atrophied muscles, extension alternated with flexion on attempts to elicit the reflex, and it is probable that with complete recovery the normal flexor reflex will become constant. In the second case, in a man recovering from sciatica, the function of the two antagonistic muscle groups was gravely impaired, more so, however, in the flexors than in the extensors, which fact was responsible for the positive Babinski reflex.

Schweizerische medizinische Wochenschrift, Basel

56: 849-500 (Sept. 4) 1926

Torsion of Hydropic Gallbladder. Feldmann.—p. 849.
*Vaccinia and Nervous System. B. Walthard.—p. 854.
Nervous Phenomena After Vaccination. E. Frommel.—p. 857.
"Swiss Death Statistics." Swiss Public Health Office.—p. 859.
Reply. A. Gigon and F. Kinzler.—p. 860.

Vaccinia and Nervous System.—Walthard was unable to produce encephalitis in rabbits by corneal inoculation with various strains of the virus of vaccinia. Even neurolapine showed no predilection for the brain.

56: 873-896 (Sept. 11) 1926

*Testing Stethoscopes. W. Tobler.—p. 873.
Reposition of Retroflexed Uterus. C. Perret.—p. 877.
Legislation Regarding Tuberculosis. E. Olivier.—p. 879.
Reply. A. Gigon and F. Kinzler.—p. 883.
A Galactagogue? E. Feer.—p. 884.
Protein Treatment of Chilblains. A. Grossmann.—p. 884.
Sanocrysin. R. Zollikofer.—p. 886.

Testing Stethoscopes.—With the help of a physicist (Johner) Tobler studied the transmission of sounds by various types of the stethoscope. Conduction of sound through a rubber tube becomes progressively impaired as the number of vibrations increase from 170 to 1,953 per second. A straight wooden stethoscope did much better. The worst results were given by the long rubber tubes of binauricular stethoscopes.

Pediatria, Naples

24: 865-920 (Aug. 15) 1926

Immunization Against Scarlet Fever. G. Rocca.—p. 865.
Pathogenesis of Achondroplasia. F. Graziano.—p. 871.
Treatment of Whooping Cough. F. Lopresti Seminerio.—p. 882.
*Leukocytolysins in Immunity and Digestion. P. Ritossa.—p. 892.

Leukocytolysins in Immunity and Digestion.—Ritossa reviews the investigations made on the presence of leuko-

cytolysins in serum. Sindoni found them in leishmaniasis; other Italian authors in digestive leukopenia.

Policlinico, Rome

33: 437-496 (Sept. 15) 1926. Surgical Section

*Experimental Gastric Ulcer. G. Baggio.—p. 437.
Bifid Ureter with Uronephrosis. C. Colucci.—p. 447.
Experimental Ileus from Retrograde Invagination After Gastro-Enterostomy. A. Fiorentini.—p. 456.
Purulent Peritonitis Simulating Incarceration of a Hernia. C. Oliva.—p. 468.
*The Site for Testis Transplants. C. Trinchera.—p. 484.

Experimental Gastric Ulcer. — Baggio, obstructed the evacuation of the stomach by folding in part of the walls to induce stenosis. In four of the ten animals thus treated, ulceration followed, with hemorrhages. The facts observed testify anew to the importance of trauma from the food in the etiology of gastric ulcer, thus confirming his conclusions from previous research on trauma ab ingestis as a factor to be reckoned with in peptic ulcer.

Importance of Site for Survival of Testis Transplants.—In Trinchera's experiments on eleven dogs, extrinsic and mechanical factors seemed to determine the fate of the graft. The transplants all died sooner or later, the survival being shorter in regions subject to compression or much movement.

Rivista di Clinica Pediatrica, Florence

24: 577-648 (Sept.) 1926

*Relations Between Beriberi and Tetany. G. Frontali.—p. 577.
Tuberculous Meningitis in Children. E. Olmi.—p. 591.
Study of the Eruption in Chickenpox. U. de Gironcoli.—p. 623.

Relations Between Beriberi and Tetany.—Frontali noted galvanic hyperexcitability and reduction of the calcium content of the blood in fifteen white rats and six pigeons kept on a deficiency diet and developing nervous symptoms suggesting beriberi. The phenomena observed resembled those of tetany in children.

Semana Médica, Buenos Aires

2: 313-376 (Aug. 5) 1926

*Paroxysmal Tachycardia in a Syphilitic. R. A. Bullrich.—p. 313.
*Diagnostic Tests for Latent Malaria. T. Padilla.—p. 319.
Induced Optic Nystagmus. R. Argañaraz and E. Adrogué.—p. 322.
Medical Climatology. G. Sayago.—p. 332.
Prophylaxis Against Tuberculosis. T. A. Tonina.—p. 340.
Rules for Protection Against Roentgen Rays. C. Heuser.—p. 362.

Paroxysmal Tachycardia of Long Duration.—The man, aged 47, was syphilitic; and the last attack of tachycardia persisted for forty-five days. Under treatment of the syphilis, the tachycardia subsided and there has been no recurrence.

Provocative Tests for Latent Malaria.—Padilla remarks that none of the tests are always reliable, but they often prove useful. Epinephrine and the ultraviolet rays are the most convenient, but injection of nitroglycerin or of strychnine may aid. The effect on the malaria parasites is not immediate. Several days may elapse before they appear in the blood stream. Ascoli lauds iron for the purpose. The malaria may persist latent for years, the parasites lurking in the spleen and bone marrow.

Archiv für exp. Pathologie and Pharmak., Leipzig

116: 117-260 (Sept.) 1926

*Crossed Blood Transfusion in Uremia. W. Nyiri.—p. 117.
Habituation to Narcotics. F. Haffner and F. Wind.—p. 125.
Anesthesia of the Frog's Heart. F. Wind.—p. 135.
Effect of Mixture of Barbital and Acetphenetidin. E. Käer and S. Loewe.—p. 140.
Effect of Mixtures of Strophanthus and Digitalis. M. Snamenski.—p. 147.
Blood Washing by Dialysis. G. Haas.—p. 158.
*Absorption of Amino-Acids by Erythrocytes. H. Häusler.—p. 173.
Heart Poisons. B. Kisch.—p. 189.
Excitation of Vagus by Atropine. B. Kisch.—p. 227.
Action of Camphor on the Spine in Decapitated Cats. W. Blume.—p. 234.
Sensitiveness of Dental Pulp to Pain. H. Heinroth.—p. 245.

Crossed Blood Transfusion in Uremia. — By bilateral nephrectomy or the injection of uranium nitrate, Nyiri produced a condition in dogs, similar to chronic uremia in man. Crossed carotid-jugular blood transfusion was then performed between the uremic and healthy dogs. The experiments lasted for two to three hours. Although the duration of life was short in the uremic animals, the determinations of urea in the blood serum and in the urine indicated that the urea was partially transferred from the uremic to the healthy dog without harm to the healthy animal. In one case the urea content of the blood of the uremic dog, which was 0.246 per cent before transfusion, fell to 0.125 per cent after the transfusion; three days later it had again reached 0.239 per cent. Histologic examination of a healthy dog used in the experiments did not show important changes in the kidneys.

Absorption of Amino-Acids by Erythrocytes and Their Relation to the Distribution of Residual Nitrogen.—Häusler found that absorption of amino-acids in vitro by the erythrocytes of human blood began at once and after one hour was in linear proportion to the amino-acid concentration of the plasma. Simultaneously the erythrocytes excreted non-protein nitrogen in amounts proportional to the amino-acids absorbed.

Beiträge zur Klinik der Tuberkulose, Berlin

64: 1-192 (Aug. 7) 1926

*Pulmonary Tuberculosis Following Trauma. F. Zollinger.—p. 1.
Tuberculosis of Axillary Lymph Glands. W. Jehn.—p. 38.
Sanocrysin in Pulmonary Tuberculosis. H. Jessen.—p. 46.
Atypical Tuberculosis. A. Easer.—p. 76.
*Specificity of Tuberculin Reaction. K. Zieler.—p. 94.
Tuberculosis in the Jewish Race. M. J. Gutmann.—p. 106.
Sanocrysin Treatment and Partigen Therapy. H. Jannasch.—p. 114.
Frequency of Tuberculosis. H. Koopmann.—p. 131.
Pulmonary Tuberculosis and Glomerular Nephritis. J. Tillgren and T. Nyrén.—p. 144.
*Tuberculosis in Nurses. Mücke.—p. 155.
Sunlight in Treatment of Tuberculosis. H. W. Knipping.—p. 180.

Pulmonary Tuberculosis Following Trauma. — Zollinger reviews the relations between different kinds of pulmonary injuries and tuberculosis, and concludes that it is unproved as yet that trauma can cause a predisposition to tuberculosis in a healthy lung.

Histologic Basis of the Specificity of the Tuberculin Reaction.—Zieler injected separately tuberculin, ground colon bacilli and filtrates of colon bacillus cultures, in human experimental subjects. Colon bacilli, injected subcutaneously, caused production of tuberculoid tissue similar to that provoked by injection of fats, lipoids or foreign bodies. The injection of a filtrate of colon bacillus cultures produced nonspecific granulation tissue. Living or dead tubercle bacilli produced tissue specific for tuberculosis. The positive skin reaction from injection of tuberculin represents the formation of a new tuberculous focus. In patients not suffering from tuberculosis, tuberculin cannot produce tuberculoid tissue.

Tuberculosis in Nurses.—Mücke believes that in explaining the incidence of tuberculosis in hospital nurses new infection is of less importance than lowered resistance from overwork, especially in the case of the younger nurses. With lowered resistance conditions become favorable for activation of preexisting foci. Of seventy-four tuberculous nurses at the Eppendorf General Hospital, Hamburg, it was found that in 45 per cent there was either tuberculosis in the family or a suspicion of tuberculosis in the personal history.

Deutsche medizinische Wochenschrift, Berlin

52: 1495-1538 (Sept. 3) 1926

Gynecologic Work and Teaching. W. Stoeckel.—p. 1495.
Surgery of Biliary Passages. G. Muennich.—p. 1499.
*Metabolism After Irradiation. R. Flickinger.—p. 1501.
*Treatment of Septic Meningitis. E. Metzger.—p. 1502.
Multiple Nodules and Purulent Iritis. A. Fuchs.—p. 1503.
Apparatus for Anthropometry. R. Knebel.—p. 1505.
*Skin Tests with Oxyuris. E. Schröpl.—p. 1508.
"Blood-Sugar After Inhalation of Oxygen." W. Heubner.—p. 1508.
Reply. H. Jacoby.—p. 1509.
Metal Treatment in Infectious Diseases. K. v. Neergaard.—p. 1509.
Diet in Infectious Diseases. H. Schall.—p. 1512.
Treatment of Sore Throat. W. Schultz.—p. 1514.
Cancer of the Stomach. v. d. Velden.—p. 1516.
Dermatologic and Venerologic Therapy. F. Dietel.—p. 1516.
Social Service at the Gesolei. Diebel-Reuter.—p. 1518.
Reichsgesundheitsamt and Public Welfare. Rubner.—p. 1520.

Metabolism After Irradiation.—Flickinger found no indications of a change in the metabolism of the liver in guinea-pigs exposed to sunlight.

Treatment of Septic Meningitis.—Each day Metzger injected 20 cc. of a 10 per cent solution of sodium iodide intravenously in patients with septic meningitis. Then she made almost daily lumbar punctures. No iodine passed into the cerebrospinal fluid. She warns against cisterna puncture, which, in one of her two successful cases, caused a paralysis of the eye muscles.

Skin Tests with Oxyuris.—In patients with oxyuris, Schröpl obtained skin reactions to an alcoholic extract of the parasites.

52: 1539-1580 (Sept. 10) 1926

*Parathyroid Tetany. F. Blum.—p. 1539.
Effect of High Altitudes on Man. F. Müller.—p. 1541.
Sedimentation Test. G. Haselhorst.—p. 1544.
Gastric Ulcer and Tabes. H. Pfitzner.—p. 1547.
Abortion. A. Sternberg.—p. 1548.
*Acute Thallium Poisoning. A. Buschke et al.—p. 1550.
*Immune Bodies of Colostrum. E. Hainiss.—p. 1552.
*Tuberculosis and Suicide. H. Koopmann.—p. 1553.
The Heart in Neurosyphilis. Ostmann.—p. 1554.
Tumor of the Right Auricle. G. Giegler.—p. 1554.
Swallowed Foreign Bodies. Paulino.—p. 1555.
Causal Treatment of Hemorrhoids. Gronau.—p. 1558.
Treatment of Skin and Venereal Diseases. F. Dietel.—p. 1559.
Social Hygiene: Food and Alcohol. E. G. Dresel.—p. 1561.
Reichsgesundheitsamt and Public Welfare. Rubner.—p. 1562.

Parathyroid Tetany.—Blum claims that before 1900 he described the protective action of a milk diet and abstention from meat in parathyroid tetany. He believes that administration of normal blood serum by mouth supplies the necessary parathyroid hormone which, according to him, is not present in an active form in the glands. He offers some criticisms of Collip's experiments.

Acute Thallium Poisoning.—Buschke, Peiser and Klopstock observed a case of attempted suicide in an adult who swallowed 0.75 Gm. of thallium nitrate. Apart from the loss of hair, the predominating symptoms were sensory phenomena and abdominal pains with vomiting. Achlorhydria was present. From the literature they quote cases of poisoning in adults from a dose well tolerated by children. One dose not exceeding 8 mg. of thallium is sufficient to cause epilation and is innocuous in children.

Immune Bodies of Colostrum.—Hainiss found that colostrum always neutralizes scarlet fever toxin. It made no difference whether the women were Dick-positive or negative. This might explain the regularly negative Dick test in the new-born. Milk is almost inactive, except in some Dick-negative women.

Tuberculosis and Suicide.—In his material of 4,000 necropsies Koopmann observed only twenty-one cases of recent tuberculous dissemination around old foci. Among these cases, fifteen were in suicides; three of the deaths were from accident and three from diseases other than tuberculosis.

Deutsche Zeitschrift für Chirurgie, Leipzig

198: 137-280 (Aug.) 1926

*Foreign Body Tuberculosis of the Peritoneum. C. Coronini and S. Iatrou.—p. 137.
*Treatment of Intussusception in Children. W. F. Suermondt.—p. 172.
Chronic Volvulus of the Stomach. L. v. Friedrich.—p. 185.
Congenital Presacral Tumors. M. Budde.—p. 190.
*Carcinoma of the Penis. V. Föderl.—p. 207.
*Pneumoradiography of the Kidney's Position. A. Roseno and H. Hartoch.—p. 250.
Pneumatic Cyst of the Brain. E. Siegmund.—p. 259.
*Tumor of the Medulla Oblongata. R. Lozano and I. Costero.—p. 270.

Foreign Body Tuberculosis of the Peritoneum.—In twenty experiments, some on guinea-pigs and some on rabbits, Coronini and Iatrou endeavored to produce foreign body pseudotuberculosis by opening the stomach and distributing the contents over the peritoneum. Comparing the results of the experiments with five clinical cases, they conclude that small quantities of the contents of the stomach or duodenum heal-in without causing diffuse peritonitis. The vegetable particles enclosed in the tubercles represent, it may be assumed, but a small part of the material which has been poured over the peritoneum. The greater part is probably disposed of by fermentation, not by phagocytosis. A large number of photomicrographs illustrate the experimental granuloma in various stages. One shows the beginning of calcification and ossification.

Surgical Treatment of Intussusception in Young Children.—Suermondt urges operation at the earliest possible moment; losing time over internal reposition is too dangerous. A single tear in the serosa may be sutured, but if the intestinal wall is torn through resection into healthy tissue is to be preferred. To prevent recurrence in ileocecal invagination, he brings the appendix outside the abdominal wall through a special opening and sutures it to the skin. This brings a broad surface of the cecum up against the abdominal wall, to which it becomes affixed in a simple and secure manner. The appendix becomes necrotic and separates in a few days.

Carcinoma of the Penis.—Föderl discusses the forty cases seen within twenty-four years in Hochenegg's clinic. Phimosis was present in 55 per cent and relative tightness or hyperplasia of the prepuce in a further 34 per cent. In fifteen cases trauma resulting in recurrent ulcer or scar was an etiologic factor. Genital syphilitic infection had been present in seven. He does not advise primary removal of the regional glands in all cases, but only in the younger patients, with a fast growing tumor involving the corpus cavernosum and rapid enlargement of the glands, with early adhesion to neighboring structures. Total ablation of the penis was necessary in only three cases. The usual practice was amputation about 2 cm. proximal to the limit of the tumor as determined by palpation. This is important from the standpoint of micturition and of ability for coitus and generation, which is not necessarily sacrificed by amputation. Total emasculation he reserves for cases in which scrotum and testicles are involved; in these cases the proportion of cure was 20 per cent in sixty-eight cases collected by Hadda.

Pneumoradiogram of the Kidney's Position.—Roseno and Hartoch recommend Rosenstein's pneumoradiography of the kidney as an auxiliary to cholecystography, where the differential diagnosis between gallbladder and kidney diseases presents special difficulties.

Histologic Structure of a Tumor of the Medulla Oblongata.—The tumor, obtained at necropsy, is described as a "simple capillary angioma or telangioma," originating exclusively in the meninges and unconnected with the brain substance. The cells were of connective tissue nature and the tumor was surrounded by a connective tissue capsule. Many foam cells were present; transition forms of glia cells did not occur. A satisfactory explanation was not found for the severe nervous disturbances from which the patient had suffered.

Folia Haematologica, Leipzig

33: 1-80 (Sept.) 1926

The Blood in Experimental Trypanosomiasis. P. Dwijkoff.—p. 1.
Epinephrine Leukocytosis. W. M. Nowodworski.—p. 7.
Maturity of Erythrocytes. H. Engel.—p. 21.
Spinal Cord Symptoms in Pernicious Anemia. E. Meulengracht.—p. 38.
Action of Iron and Arsenic on Bone Marrow. M. A. Weiss.—p. 57.
*Diagnosis of B. Paratyphosus B Infection. A. Piney and A. R. Berrie.—p. 78.

The Diagnosis of Infections with B. Paratyphosus B and Allied Organisms.—Piney and Berrie found a definite alteration in the blood picture in six cases of infection with the paratyphoid B bacillus, examined between the fifth and tenth days of illness. There is a tendency to leukopenia with relative lymphocytosis, but the striking feature is the increased percentage of monocytes. In the present cases the numbers varied between 10 per cent (in two very mild cases) and 22.5 per cent, i. e., between 350 and 1,012 per cubic millimeter.

Klinische Wochenschrift, Berlin

5: 1641-1688 (Sept. 3) 1926

The Psyche and Puberty. H. Hoffmann.—p. 1641.
*Specific Dynamic Action, Pituitary and Obesity. O. Kestner et al.—p. 1646.
*Inactivation of Antirachitic Factor. A. Adam.—p. 1648.
*Fragility of Erythrocytes and Cancer. E. Cohnreich.—p. 1650.
*Nephrectomy in Infants. F. Brüning.—p. 1652.
*Fatal Hypoglycemia. A. Heimann-Trosien and H. Hirsch-Kauffmann.—p. 1655.

Diaphragmatic Hernia or Relaxation. H. Schönfeld.—p. 1657.
Blood Groups in Berlin. F. Schiff.—p. 1660.
*Spleen as Reservoir of Erythrocytes. A. Scheunert and F. W. Krzywanek. —p. 1663.
Lactic Acid Formed by Blood. A. Abraham.—p. 1664.
Bronchography. K. Henius.—p. 1664.
*Duration of Pregnancy. A. Seitz.—p. 1665.
Functional Organization of Tissues. L. Berczeller.—p. 1669.
*Poisoning by Hypnotics. J. Lange and E. Guttmann.—p. 1686.

Specific Dynamic Action, Pituitary and Obesity.—Kestner, Liebeschütz-Plaut and Schadow show that a determination of respiratory metabolism in the second hour after a meal consisting of 200 Gm. of hamburger with 50 Gm. of butter, 50 Gm. of bread and two cups of coffee is sufficient for an estimation of the specific dynamic reaction. It is low in the great majority of obese patients, especially of the Fröhlich type. Some preparations of the anterior lobe of the pituitary taken for a week by mouth increase it distinctly. Unfortunately they usually also lower the basal metabolism, as Liebesny found. The action on the general development, especially of sex organs, and on growth was remarkable in some of their patients. The typical pituitary obesity affects chiefly the hips, thighs, shoulders and arms, while the hands and feet are usually small. The forearms and legs are less fat than the proximal parts. The fat is softer than in obesity from overeating.

Inactivation of Antirachitic Factor.—Adam irradiated cod liver oil with ultraviolet rays. Although the dose of the light corresponded to that which activates cholesterol, the cod liver oil lost its antirachitic action. The irradiation increased the viscosity and surface tension of the oil, and lowered its iodine number. A saturation of the unsaturated compounds and an oxidative cleavage occurred. It is probable that such a saturation inactivates the sterols of cod liver oil.

Fragility of Erythrocytes and Cancer.—Cohnreich found an increased osmotic resistance of erythrocytes in eighty-three out of ninety-three patients with cancer of the gastrointestinal tract.

Nephrectomy in Infants.—Brüning remarks that the changing view of pediatricians regarding suppurating kidney is reflected in the changes of nomenclature. The disease has been described as cystitis, pyelocystitis, pyelitis, pyelonephritis and the suggestion has lately been made to call it nephropyelitis. The infection is as a rule hematogenous—not ascending—and causes a suppurative nephritis with slight involvement of the kidney pelvis. If the infant not only does not improve in about ten days, but has pyemic symptoms, the enlarged kidney should be inspected, and, if it contains a great many abscesses, extirpated. The disease is unilateral in more than one third of the patients.

Fatal Hypoglycemia. — Heimann-Trosien and Hirsch-Kauffmann were treating a diabetic girl (8 years old) by insulin. The patient oscillated between acidosis and hypoglycemic attacks, which occur more suddenly in children than in adults. She had hypoglycemic symptoms one evening, improved after administration of 10 Gm. of dextrose by mouth, relapsed a few hours later, again improved, but lost consciousness and had convulsions after a short time. The blood sugar fell to 0.052 per cent in spite of enema and intravenous injections of dextrose solutions (a total of 107 Gm. of dextrose), and epinephrine injections. The patient died.

Spleen as Reservoir of Erythrocytes.—Scheunert and Krzywanek found, in confirmation of Barcroft's theory, that exertion does not cause any change in the number of erythrocytes in splenectomized animals.

Duration of Pregnancy.—Seitz reviews especially the medicolegal aspect of the problem. A mature baby may unquestionably be born after a pregnancy of from 250 to 298 days' duration. Nürnberger found that only 0.26 per cent of mature children are born otherwise. The probability decreases rapidly below 245 and above 302 days. Only one mature child among 100,000 may be expected theoretically from a pregnancy shorter than 240 days, one in a million before 236 days, one in three and one-third millions before the 234th day. Before the 226th day a mature baby is practically impossible. All the signs of maturity should be carefully noted.

Poisoning by Hypnotics.—Lange and Guttmann observed horizontal or vertical nystagmus and sometimes paralysis of the extensor muscles of the eye in eighteen cases of poisoning by hypnotics of the barbital group and by chloral hydrate.

Medizinische Klinik, Berlin

22: 1395-1436 (Sept. 10) 1926

Form and Life. A. Dietrich.—p. 1395.
*Bacteriology of the Duodenum. L. Kuttner and W. Löwenberg.—p. 1398.
Tumor Metastases in the Lungs. R. Kienböck.—p. 1400.
Arterial Hypotension. F. Munk.—p. 1403. C'td.
Eczema of the Face. F. Pinkus.—p. 1406.
Submucous Myoma in the Puerperium. H. R. Schmidt.—p. 1407.
Angiectasis from Irradiation. J. Fabry.—p. 1408.
Purulent Peritonitis. R. Pamperl.—p. 1409. C'td.
Disinfection of Bile. F. Rabe.—p. 1411.
*Diagnosis of Peptic Ulcer. L. Hess and J. Faltitschek.—p. 1413.
*Tocokinins. M. Dohrn et al.—p. 1417.
Occupational Injury and Pernicious Anemia. V. Schnizer.—p. 1422.
Pigmentary Diseases of the Skin. F. Pinkus and L. Kleeberg.—p. 1423.
Experimental Research on Syphilis. R. Prigge.—p. 1424.

Bacteriology of Duodenum.—Kuttner and Löwenberg emphasize the value of bacteriologic examination of the duodenal contents, which in healthy subjects are practically sterile. Anacidity is frequently associated with enterococci and sometimes with colon bacilli. In pernicious anemia both are practically always found in the duodenum and even in the stomach. About four-fifths of all cholecystitis patients have an abnormal flora in the duodenum. Löwenberg found that in these conditions the duodenal contents had lost their bactericidal power. Lavage of the duodenum with 200-300 cc. of a 10-15 per cent solution of magnesium sulphate has given good results.

Diagnosis of Peptic Ulcer.—In patients with ulcer of the stomach or duodenum, Hess and Faltitschek found that anesthesia of the splanchnic nerve (by paravertebral injection of procaine hydrochloride) was not followed by the expected increase in gastric motility and secretion. They attribute this to an interruption of the nervous impulses in the ulcerated tissues.

Tocokinins.—From various vegetables (sugar beets, potatoes, cherries, etc.) and from yeast Dohrn, Faure, Poll and Blotevogel isolated substances which had the properties of an estrual hormone. They suggest the name "tocokinins" for these extracts.

Münchener medizinische Wochenschrift, Munich

73: 1471-1508 (Sept. 3) 1926

*Insulin in Vomiting of Pregnancy. H. Seidl.—p. 1471.
Insulin in Tuberculosis. Unverricht.—p. 1473.
*Insulin After Cataract Operation. E. O. Schoch.—p. 1474.
Variability of the Mamillary Line. K. Grassmann.—p. 1474.
Prognosis of Exophthalmic Goiter. E. Gmelin.—p. 1476.
Cause and Treatment of Goiter. P. Hoffmann.—p. 1476.
*Gallbladder and Abdominal Pressure. T. Bársony and E. Koppenstein. —p. 1478.
Dick Toxin and Scarlet Fever Streptococci. R. Bieling.—p. 1479.
Etiology of Measles. M. Flesch.—p. 1480.
Motor Points. R. Geigel.—p. 1480.
Nongonorrheal Epididymitis. E. A. Burmeister and P. Cahn.—p. 1481.
Fibrous Serositis of Intestine. P. Schrödl.—p. 1482.
Interferometry and Endocrine Diseases. K. Hellmuth.—p. 1484.
Finger Cot of Collodium. D. Kulenkampff.—p. 1485.
Needle for Cisterna Puncture. P. Emdin.—p. 1486.
Disturbances of the Vital Instincts. L. R. Müller.—p. 1486. C'cn.
Burns. L. v. Zumbusch.—p. 1489.

Insulin in Vomiting of Pregnancy.—Seidl injected from 10 to 20 units of insulin twice daily in pregnant women with grave (acetonuria) vomiting. He was satisfied with its action on the acidosis as well as on the vomiting.

Insulin After Cataract Operation.—Schoch was unable to produce atropine mydriasis in diabetic patients treated with insulin. Therefore, it is necessary to use other drugs, for instance hyoscyamin, to dilate the pupil after operation for cataract.

Gallbladder and Abdominal Pressure.—Bársony and Koppenstein found that changes of position of the patient do not influence evacuation of the gallbladder.

73: 1509-1546 (Sept. 10) 1926

*Treatment of Paralytic Ileus. E. Vogt.—p. 1509.
Elasticity of Arteries in Tuberculosis. M. Hochrein.—p. 1512.
Heredity in Acne. H. W. Siemens.—p. 1514.
Acid-Alkali Balance. K. Beckmann and Ewig.—p. 1517.

Adsorption by Charcoal. M. A. Rakusin.—p. 1519.
Anterior Synechias of the Eye. Bonnefon.—p. 1520.
Physicians Specializing in Athletics. H. Herxheimer.—p. 1520.
Confidential Death Reports. R. Bandel.—p. 1521.
Occupational Eczemas. C. M. Hasselmann.—p. 1523.
Friedrich Schultze. Stursberg.—p. 1526.
Medical Publications. H. Eggers.—p. 1528.
Liability in Sanitarium Treatment. Schiedermair.—p. 1529.

Treatment of Paralytic Ileus.—Vogt reports the results in eighty-one cases of postoperative ileus treated by the Klotz method. About 500 cc. of physiologic solution of sodium chloride, to which 5 or 6 ampules of a pituitary extract are added, is slowly injected into the vein. In the most favorable cases, the bowels move during the injection. If oppression or dyspnea appear, it is necessary to interrupt the procedure, which may be continued after a few hours. He always supplements the above treatment with a very slow injection of a 10 per cent solution of saccharose. He reports in detail the history of an apparently desperate case of ileus after radical operation for cancer of the ovary. Five injections were necessary (besides lavage of the stomach), but the woman recovered. The mortality in his cases of paralytic ileus was 22.2 per cent.

Wiener klinische Wochenschrift, Vienna

39: 1009-1032 (Sept. 2) 1926

*Hyperventilation. R. Weeber and W. Schwarzacher.—p. 1009.
*Bronchography. A. Rad.—p. 1011.
*Hypotonic Hypertension. L. Lenaz.—p. 1015.
*Acid-Alkali Balance and Peptic Ulcer. H. L. Popper.—p. 1017.
Determination of Basal Metabolism. E. Stoltz.—p. 1018.
Beginnings of Microscopy. I. Fischer.—p. 1020.
Neuroses and Cardiovascular Diseases. B. Dattner.—p. 1022.
Laryngology. E. Suchanek.—p. 1024.
Nervous Disturbances in Tuberculosis. F. Pineles. Supplement.—pp. 1-18.

Hyperventilation.—Weeber and Schwarzacher found, with the interfereometric method, a transitory increase of the refraction index of the serum after forced breathing. It may be due to evaporation of water by the lungs.

Bronchography.—Rad prefers bromine in oil to iodized oil in bronchography.

Hypotonic Hypertension.—Lenaz concludes from his observation of the blood vessels of the retina that essential hypertension is associated with a swelling of the wall of the blood vessels—not with a contraction. This would represent an "urticaria of blood vessels" and would conform to the vagotonia found in such patients. The true tonus of such a blood vessel is lower than in the normal condition.

Acid-Alkali Balance and Peptic Ulcer.—Popper determined the hydrogen ion concentration of the urine before and after an intravenous injection of 20 cc. of an 8 per cent solution of sodium bicarbonate. He confirms the fact that the urine does not always become alkaline after the injection, but he found this just as frequently in ulcer as in other disorders of the stomach and especially frequently in cholelithiasis.

39: 1033-1056 (Sept. 9) 1926

*Liver and Blood Distribution. R. Baer and R. Rössler.—p. 1033.
Mediastinum in Bronchial Stenosis. F. Hasslinger and K. Hitzenberger.—p. 1035.
Unilateral Distant Reflexes. I. Knotz.—p. 1036.
Tumors of Ectopic Testis. S. Rubaschow.—p. 1040.
Pulmonary Tuberculosis and Lupus. G. v. Seutter.—p. 1042.
Treatment of Fibrous Osteitis. F. Mandl.—p. 1046.
Fever and Tuberculosis. E. Zak. Supplement.—pp. 1-12.

Liver and Blood Distribution.—Baer and Rössler perfused surviving livers of dogs. On perfusion from the portal vein, addition of histamine caused a lasting increase in the volume of the liver and a transitory decrease in the flow. On perfusion from the hepatic vein, histamine induced contraction of the liver and a lasting decrease in the flow. Epinephrine produced the latter change from whichever direction the perfusion was made. They regard their experiment as a confirmation of Mautner and Pick's theory of a functional occlusion of the hepatic veins. They point out that this difference in the action of histamine, according to the vein by which it is injected, might have a practical significance, since a retrograde blood circulation may occur in the liver.

39: 1057-1102 (Sept. 16) 1926

Pellagra in Austria. L. Arzt.—p. 1057.
*Ureterovenous Fistula. E. T. Brücke.—p. 1058.
*Treatment of Syphilis. E. Finger.—p. 1059.
Prognosis in Surgery. A. Fraenkel.—p. 1061.
*Gymnastics for Infants. F. Hamburger.—p. 1064.
Acute Hallucinosis. F. Hartmann.—p. 1066.
*Treatment of the Asphyctic New-Born. F. Kermauner.—p. 1070.
Morphologic Pathology. F. J. Lang.—p. 1073.
*Insulin Antagonist in Diabetes. O. Loewi.—p. 1074.
*Sleep and the Brain Cortex. O. Marburg.—p. 1076.
Purulent Aortitis. R. Maresch.—p. 1078.
*Tumors and Inflammations of the Orbit. J. Meller.—p. 1080.
Acute Mastoiditis. H. Neumann.—p. 1085.
Pathology of Sudden Cardiac Death. F. Reuter.—p. 1086.
Cancer and Sarcoma in the Same Eye. R. Seefelder.—p. 1092.
Treatment of Gastric Crises. J. Wagner-Jauregg.—p. 1093.
Saponins. R. Wasicky.—p. 1095.
Dislocation of the Semilunar Bone. A. Wittek.—p. 1097.
Postanginal Pyemia. J. Zange.—p. 1099.
Treatment of Inoperable Cancer. G. Holzknecht.—p. 1101.

Ureterovenous Fistula.—Experimenting on dogs, Brücke implanted one ureter into the iliac vein. In the six successful cases, the picture of uremia developed rapidly. Five of the dogs died on the first or second day; one lived for five days. He concludes that these experiments speak for the hypothesis that uremia is not caused by substances preformed in the blood, but by the action of nephrogenous poisons.

Treatment of Syphilis.—Finger concludes from his and Kyrle's experience that it is possible to cure syphilis in the secondary stage by one course of arsphenamine—followed by a course of malaria—and this in turn followed by a course of arsphenamine, the whole lasting for about twelve weeks. He also saw good results in later stages, with changes in the cerebrospinal fluid, by treatment consisting of a preliminary course comprising 3 Gm. of neo-arsphenamine, followed by 8 to 10 attacks of malaria and concluding with another course of 3 Gm. of neo-arsphenamine.

Phylogenesis and Gymnastics for Infants.—Hamburger regards the introduction of gymnastics as a valuable step forward in the management of infants. Gymnastics should be instituted when the infant is 2 or 3 months old.

Treatment of the Asphyctic New-Born.—Kermauner has discontinued the use of the catheter for aspirating water from the trachea and uses it only for cleansing the mouth, nose and pharynx. Schultze's violent swinging method can do only harm, since most of the asphyxias are due to injuries of the brain and tentorium. Necropsy on seventy-three newborn children (9.1 per cent of his asphyctic cases) showed that his moderation in treatment was correct. Cautious handling of the baby, very cautious insufflation of air, a warm bath, repeated cleansing of mouth, nose and pharynx, irritation of the skin, cardiac stimulants, lobelia and—above everything—patience and calmness are the best methods.

Insulin Antagonist in Diabetes.—Loewi found with Dietrich and Hausler that in diabetes as well as during the action of epinephrine, the blood plasma inhibits the fixation of dextrose in erythrocytes. Insulin counteracts this inhibition.

Sleep and the Brain Cortex.—Marburg finds that as early as 1846 Purkinje had given about all the opinions on sleep which later authors have expressed. He thought chiefly of a vasoconstriction in the thalamus, interrupting the pathways in the corona radiata. Mauthner's tentative hypothesis requires a blocking of the connection between the external and internal layers of the cortex, which may be initiated by any part of the brain.

Tumors and Inflammations of the Orbit.—Meller does not hesitate to remove tumors from the orbit, if it can be done without injury to the eye. Otherwise, and if vision in the eye be good, the question of operation is extremely difficult to decide. Too many cases are reported where an eye was sacrificed unnecessarily. The Wassermann reaction is frequently negative with gumma of the orbit. Energetic antisyphilitic treatment should always be started, regardless of the result of the test. Tuberculosis is almost as frequent. Diagnosis from small excised particles of tissue is frequently wrong (fibrosarcoma or round-cell sarcoma instead of chronic inflammation). Roentgen-ray treatment may give good results.

Zeitschrift f. d. ges. experimentelle Medizin, Berlin

52: 1-290 (Sept. 11) 1926

Retention of Vital Dyes. J. R. Petroff.—p. 1.
*Metabolism in Typhoid. E. Le Blanc and L. Gmelin.—p. 14.
*Glycogen in Diabetes. W. S. Iljin.—p. 24.
*Toxicity of Colloidal Silver. J. Voigt.—p. 33.
Acid Swelling of the Liver in Vitro. M. A. Magath.—p. 41.
Acid Swelling of Epithelium of Uriniferous Tubules. N. W. Lazarew. —p. 57.
*Functional Length of Intestine. Van der Reis and Schembra.—p. 74.
*Decapsulation of the Kidney. W. Hülse and S. Litzner.—p. 84.
Acid-Base Equilibrium in Tetany. F. Mainzer.—p. 103.
*Protein and Allergy from Medicines. Samson and Götz.—p. 121.
Experimental Studies of Erythropoiesis. T. S. Istomanowa.—p. 140.
*Idem: A. Swjatskaja.—p. 150. Idem: T. Istomanowa et al.—p. 160.
Influence of Venesection, Pyrodin Anemia and Splenectomy on Blood Cholesterols. A. L. Mjassnikow.—p. 171.
Aortic Pain and Its Conduction. E. A. Spiegel and S. Wassermann. —p. 180.
*Blood Sugar and Glycogen in Nutritional Disturbances. G. Eisner.—p. 214.
Effect of Thyroxin on Gas Metabolism. W. Arnoldi.—p. 249.
Effect of Insulin on Blood Calcium. E. Kylin.—p. 260.
Transplantation of Bone Marrow. W. F. Katzenstein.—p. 262.
Bacteriostats in Mucosa of Small Intestine. Bogendörfer.—p. 274.
Comment. F. W. Radel.—p. 278.
"Cardio-Aortic Paths," "Heart and Vessels After Sympathectomy." Danielopolu.—p. 280. Reply. D. Ionescu.—p. 286.

Metabolism in Typhoid.—Le Blanc and Gmelin noted an increase in the metabolism during the fever period of typhoid; it reached almost normal when the fever disappeared. During convalescence there was again an increase in the metabolism, which returned very gradually to normal. They consider that these changes depend upon the infection itself, and that large amounts of food are needed to minimize this result of the infection.

Diabetes and Carbohydrate Metabolism.—Iljin injected glycogen, isolated from the liver of rabbits, into diabetic cats. He found that they reacted the same as on administration of glucose. In less severe cases of diabetes the glycogen was partially utilized, in more severe cases, not at all. Sugars resulting from the splitting of glycogen cannot be utilized by the body without the pancreatic hormone. The importance of glycogen for the economy of the organism lies in the fact, that it is the most suitable form in which carbohydrates may be stored.

Toxicity of Colloidal Silver.—Voigt injected solutions of colloidal silver intravenously into rabbits, and studied its distribution in the body. He found that the combination of different colloidal substances in the body with the injected silver under certain circumstances caused poisoning. He quotes from the literature fatal cases of colloidal therapy of syphilis and gonorrhea and refers to poisonings observed by himself. He warns against the therapeutic use of colloid chemical preparations which have not first been tried out in animal experiments.

Functional Length of Intestine.—Basing their opinion on surgical results and observations through the abdominal window, Reis and Schembra claim that, contrary to Ganter's assertion, the length of the intestine in vivo is considerably less than in the cadaver. From observation on four dogs they conclude that this difference in length is due to a state of tonus present in the intestine during life. The length determined on the cadaver is thus considerably greater than the functional length.

Experimental Investigations into the Effect of Decapsulation of the Kidney.—Hülse and Litzner found in experiments on dogs that simple squeezing or decapsulation of the healthy kidney caused reflex dilation of the vessels, resulting in increase in the blood circulation in the kidney. With this was associated a decrease in the urine secreted. The experiments explain the cure of nephritic and eclamptic anuria, dependent on spastic ischemia, by decapsulation. Hematuria can also be made to disappear by removal of the stasis, and the active hyperemia aids in the cure of disseminated kidney abscesses.

Body Proteins and Allergy from Medicines.—Samson and Götz found that it was necessary to perform several successive injections of blood mixed with amidopyrine to produce allergy in guinea-pigs. The allergy depends upon a reaction product of the amidopyrine and the circulating blood. The blood proteins take part in the fixation of the amidopyrine, and blood corpuscles isolated in Ringer's solution are also able to bind it.

Age of Erythrocytes and Their Osmotic Resistance.—Swjatskaja found in experiments on rabbits that the osmotic resistance of the erythrocytes was, generally speaking, inversely proportional to their age. An increase of more resistant red corpuscles in the blood represents an increased erythropoiesis, and increase of less resistant erythrocytes may represent an inhibition of physiologic hemolysis. But since osmotic resistance is influenced by other physiologic and pathologic factors beside the age of the erythrocytes, the latter cannot be used alone as a measure of the erythropoiesis.

Blood Sugar and the Glycogen Content of the Organs in Nutritional Disturbances.—Eisner found in several series of experiments on rabbits that normally fed animals could receive excessive amounts of dextrose for a considerable length of time without the occurrence of any disturbances. Occasionally the animals excreted sugar. In fasting animals the blood sugar increased as the body weight decreased. They were able to produce and store glycogen in the liver after administration of dextrose. Animals fed with sugar only were able to produce some glycogen, but unable to store it. Glycogen fixation was disturbed.

Zentralblatt für Chirurgie, Leipzig

53: 2385-2448 (Sept. 18) 1926

*Operative Treatment of Cardiospasm. E. Crone-Münzebrock.—p. 2386.
*Periureteral Infection. W. Israël.—p. 2388.
Appendicitis with Cirrhosis of Liver. T. Wilhelm.—p. 2392.
Strangulated Obturator Hernia. A. Menter.—p. 2395.
Traction Splint for Humerus. W. Woloschinow.—p. 2398.
*Sources of Error in Roentgen-Ray Diagnosis. A. Most.—p. 2403.

Operative Treatment of True Cardiospasm.—Crone-Münzebrock used digital dilatation successfully in two cases of high grade cardiospasm of ten years' standing. He opened the stomach and slowly dilated the cardia till he had introduced three fingers. He holds that the use of any instrument is too dangerous. One case was recent. In the other there had been no recurrence at the end of five years.

Danger of Periureteral Infection After Ureterolithotomy.—Israël reports the case of a woman, aged 26, who died of acute sepsis, which set in without recognized warning seventeen days after ureterolithotomy. At necropsy a periureteral abscess was discovered. The diagnosis of such conditions is facilitated by bearing in mind that abscesses in the soft retroperitoneal cellular tissue need not cause high temperature; vaginal or rectal examination aids. If an abscess is certain, the best drainage conditions are obtained by directing the pus toward the vagina in a woman, the perineum in a man.

Source of Error in Roentgen-Ray Diagnosis.—Most reports a case in which a cherry-sized pendulous fibroma of the skin cast a shadow in the roentgenogram resembling a kidney stone. In another case a spot on the photographic plate was responsible for a diagnosis of stone in the bladder.

Zentralblatt für innere Medizin, Leipzig

47: 857-872 (Sept. 4) 1926

*Pathogenesis of Renal Hemorrhages. M. Volterra.—p. 857.

Pathogenesis of Renal Hemorrhages.—Volterra studied microscopic sections from kidneys affected by various forms of nephritis. He believes that a lesion of the adventitia of capillaries and small veins constitutes the most important cause of hemorrhage in the kidney. It was impossible to impregnate such an adventitia with silver and it had lost its delicate reticular structure. He believes that similar changes might account for other hemorrhages.

47: 873-904 (Sept. 11) 1926

*Glycemia in Liver Diseases. O. Klein and H. Holzer.—p. 874.

Glycemia in Liver Diseases.—Klein and Holzer administered 100 Gm. of dextrose to various subjects, and a few days later repeated the dose with the addition of 20 Gm. of urea. The blood sugar never rose as high under the latter circumstances as in the former, and by the third hour it usually fell

below the initial level. This was especially pronounced in patients with diseases of the liver.

Russkaya Klinika, Moscow

6: 149-296 (Aug.) 1926

Hormone-Producing Apparatus and Vegetative System. J. L. Rapoport. —p. 149.
Clinical Picture of Nodular Periarteritis. E. Tareeff.—p. 157.
Clinical Signs of Idiopathic Dilatation of the Esophagus. N. V. Morakhovskiy.—p. 169.
*Pathogenesis of Spasm of the Esophagus. N. S. Chetverikoff.—p. 180.
Methods of Testing Gastric Contents. D. F. Okuneff.—p. 187.
Acute Serous Meningitis from Trauma. V. J. Machan.—p. 198.
Surgical Treatment of Lumbar Sciatica. D. A. Shamburoff.—p. 211.
*Syphilis and Juxta-Articular Nodes. I. N. Olesoff.—p. 220.
Action of Iodine and Strong Silver Protein on Uterine Mucosa. R. A. Chertok.—p. 229.

Pathogenesis of Spasm of the Esophagus.—Chetverikoff describes four cases of spasm of the esophagus, one with fatal issue. At necropsy the chief changes were found in the peripheral sympathetic ganglions. The lesion of the sympathetic had been reflected in the clinical picture by predominance of the vagus, which was immediately responsible for the muscular contraction. Spasm of the esophagus accompanying ulcer of the stomach may not be of reflex origin, but may be due to enhanced irritability of the vagus.

Syphilis and Juxta-Articular Nodes.—Two of Olesoff's three patients with juxta-articular nodes were unquestionably syphilitics; in the other, syphilis was suspected. On histologic examination, a node proved to be a voluminous tubercular syphilid. In one case good results have already been obtained from antisyphilitic treatment. There are five illustrations of the lesions.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

70: 1263-1382 (Sept. 18) 1926. Partial Index

Danger from Smallpox Vaccination. G. van Rijnberk.—p. 1264.
*Postvaccinal Encephalitis. F. S. van B. Bastiaanse et al.—p. 1267.
Dick's Reaction in Practice. G. A. Rademaker.—p. 1290.
Stillbirth. J. Sanders.—p. 1300.

Postvaccinal Encephalitis.—Bastiaanse, Bijl and Terburgh review thirty-five cases, 43 per cent of which proved fatal. Cases were more frequent in small communities and showed an increase in the month of March. The first symptoms usually occurred 10 to 13 days after vaccination. It was not possible to isolate the encephalitic virus from the vaccine or from the cerebrospinal fluid of the patient. They conclude that the postvaccinal encephalitis was probably caused by an ultravirus latent in the patient, which was activated by the vaccination.

Acta Medica Scandinavica, Stockholm

64: 1-111, 1926

*Arsphenamine and Blood Sugar. K. Hedén.—p. 1.
*Macular and Systematic Telangiectases. Å. Barkman.—p. 6.
Intestinal Parasites in Finland. R. Ehrström.—p. 29.
*Effect of Epinephrine on the Blood Pressure. A. Brems.—p. 69.
*Acidosis Therapy in Colon Bacillus Infection. A. H. Johansen and E. J. Warburg.—p. 91.

Effect of Arsphenamine on the Blood Sugar Curve.—Hedén injected neo-arsphenamine in two patients, one with syphilis, the other with tabes dorsalis. In the former case he noted a decrease of 13 mg. in the blood sugar, in the first four hours after the injection of 0.45 Gm. A dose of 0.60 Gm. caused a decrease in the blood sugar of 17 mg. In the second case there was a blood sugar decrease of 23 mg. one hour after the injection of 0.45 Gm. of arsphenamine; at the end of four hours the decrease was 50 mg.

Macular and Systematic Telangiectases.—Barkman reports the case of a woman, aged 22, with congenital reddish spots on the right arm and shoulder. During the last year other spots, depigmented or slightly pink, developed. Associated hemorrhage, suppuration or pain did not occur. The thyroid was of normal size. The histologic diagnosis, made from skin removed from the affected areas, was cutaneous telangiectasis. On examination of the nervous system there were found atrophy of the right subscapular and suprascapular muscles, bilateral vestibular nystagmus, disturbance of a number of reflexes and deficient sensitiveness to pain and to temperature variations in the spotted skin areas. These symptoms point to syringomyelia associated with a lesion of the gray matter of the spinal cord between the fourth cervical and the fifth dorsal vertebrae. The case appears to be unique in the literature.

Effect of Oral Administration of Epinephrine on the Blood Pressure.—Brems gave 4 cc. of a 1 per cent solution of epinephrine in the same amount of water to twenty-one fasting patients, and measured the blood pressure at frequent intervals for two hours or more. In five the pressure rose; in seven it remained unchanged. The blood sugar was increased in all.

Acidosis Therapy in Colon Bacillus Infections of the Urinary Tract.—Johansen and Warburg studied the growth of colon bacilli in buffered broth of varying acidity, containing different amounts of methenamine. They found that the higher the acidity of the medium, the greater was the inhibition of growth. On these observations they based an acidosis therapy. Thirty-five cases of colon bacillus pyuria were treated with calcium chloride and ammonium chloride, given by mouth. A complete cure with sterile urine was obtained in 57 per cent. (Of uncomplicated cases, 80 per cent were rendered free from bacteria.) Thirty per cent were relieved of all symptoms, although they did not become free from bacteria. The treatment was without effect on 13 per cent.

Hospitalstidende, Copenhagen

69: 817-836 (Aug. 26) 1926

Danish Preparations for Producing Skin Reactions. K. Baagøe.—p. 817.
Hemorrhage from Ruptured Cyst of Corpus Luteum. H. K. Lassen. —p. 825.
*Urobilinuria in Neurologic Patients. E. J. Larsen.—p. 831.

Urobilinuria in Neurologic Patients.—In an examination of the urine of 286 neurologic patients Larson did not find urobilin in those suffering from chronic epidemic encephalitis, paralysis agitans, epilepsy, tabes, cerebrospinal syphilis, cerebral arteriosclerosis, senile dementia, spastic paraplegia or tumor of the central nervous system. Urobilinuria was present in 48 per cent of the forty-four alcoholics, all lately admitted patients. It disappeared during their stay in hospital but recurred with resumed consumption of alcohol. It was shown experimentally that a single inebriation was not enough to provoke the urobilinuria.

Hygiea, Stockholm

88: 673-704 (Sept. 15) 1926

Cloudberries in the Treatment of Scurvy. O. Medin.—p. 673.
*Ulcerous Proctitis After Blood Transfusion. J. Hellström.—p. 683.

Ulcerous Proctitis After Blood Transfusion.—A few hours after blood transfusion for traumatic hemorrhage in a man, aged 52, Hellström saw the onset of vomiting and oliguria. Pus and blood were present in the feces for several weeks. Severe proctitis was discovered 15 cm. from the anus; from this a formation resembling carcinoma gradually developed. The symptoms disappeared after establishment of an artificial anus. He claims that the condition was caused by hemolysis of the erythrocytes of the patient's blood, due to the serum of the donor; the blood of patient and donor belonged to group IV.

Ugeskrift for Læger, Copenhagen

88: 815-834 (Sept. 9) 1926

*Cicatricial Strictures of the Esophagus. E. Thomsen.—p. 815.
Catarrhal Icterus and Acute Yellow Atrophy of the Liver. A. Thisted. —p. 823.

Cicatricial Strictures of the Esophagus.—Thomsen studied the physiology of esophageal stricture and suggests that the tendency to location in the upper portion is due to a sphincteric action on the part of the inferior constrictor of the pharynx; in the middle portion to decrease in the velocity of the contraction wave where it passes over into the smooth musculature; in the third portion to constriction of the aperture in the diaphragm. In ten cases, caused by swallowing corrosive substances, he obtained satisfactory results by the use of bougies. One case has been under observation for fifteen years.